SEPTEMBER 1961

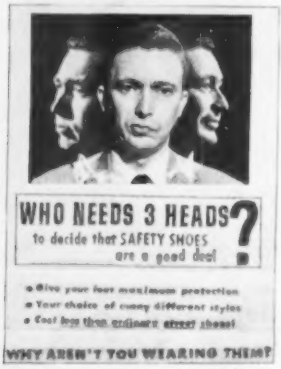
National SAFETY NEWS

A NATIONAL SAFETY COUNCIL PUBLICATION

Hearing Protection —Whose Failure?

How come you're in the accident business, too?

Let us send you this FREE POSTER



Designed especially for bulletin board use. WRITE FOR YOURS TODAY.

194,000 disabling foot injuries in an average year — these are undeniable figures and it's costing American industry millions of dollars annually.

Just one foot accident in your plant puts you in two businesses — the one, your profession, represents PROFIT . . . the other, A-C-C-I-D-E-N-T-S, is ALL LOSS.

Today over 27,000,000 workers are on jobs where they should be wearing safety shoes, yet only 3 million do.

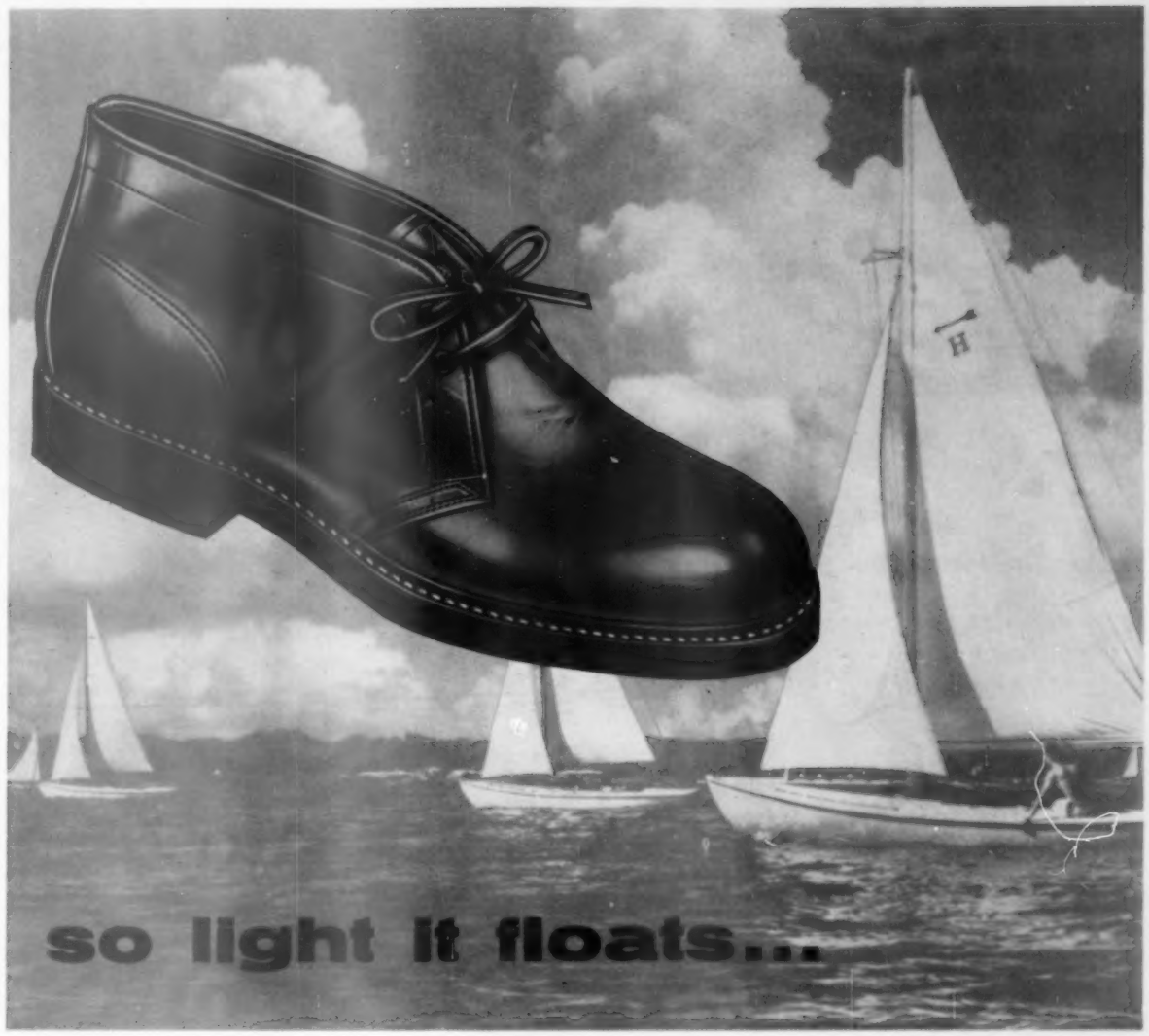
Only a steel toe can make a shoe safe. Get out of the foot accident business! See a safety shoe supplier about one of the easy plans he has to furnish your workers with safety shoes.

Safety Box Toe Company

812 STATLER BUILDING • BOSTON

Manufacturers of 19 styles of steel toes
all AUSTEMPERED for maximum protection

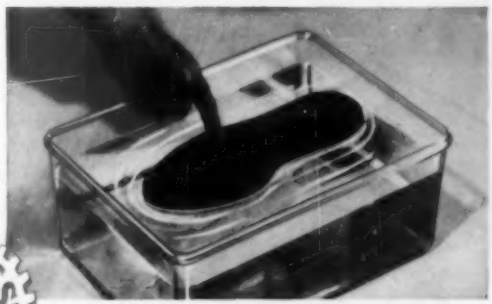
CIRCLE 1 ON READER CARD



This Hy-Test style . . . the H946 Chukka . . . gives workers the easy-going mobility they want *plus* the safe, sure protection they cannot sacrifice. Soft, sturdy glove leather uppers, oil-resistant cellular crepe anti-slip soles and the famous Anchor Flange Steel Box Toe keep H946 light in weight yet durable and safe. One of many more advanced designs now coming from Hy-Test. Add it to your stock . . . HY-TEST SAFETY SHOES, Division, International Shoe Company, 1509 Washington Ave., St. Louis 66, Mo. . . . 2224 N. Tenth St., Philadelphia 33, Pa.

IT'S TRUE!

The Resist-Oil Cellular Crepe Grit sole of Hy-Test's H946 is so light it floats! This alone is not its only feature . . . it makes the entire shoe lighter . . . is smooth surface but highly slip-resistant.



HY-TEST

HY-TEST INTERNATIONAL SHOE COMPANY SAFETY SHOES

Safety Shoes

CIRCLE 4 ON READER CARD

National SAFETY NEWS

A NATIONAL SAFETY COUNCIL PUBLICATION

VOL. 84, NO. 3 SEPTEMBER 1961

HEARING PROTECTION

FEATURE ARTICLES

DEPARTMENTS

NATIONAL SAFETY COUNCIL

Chartered by the Congress of the United States

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425 North Michigan Avenue, Chicago 11

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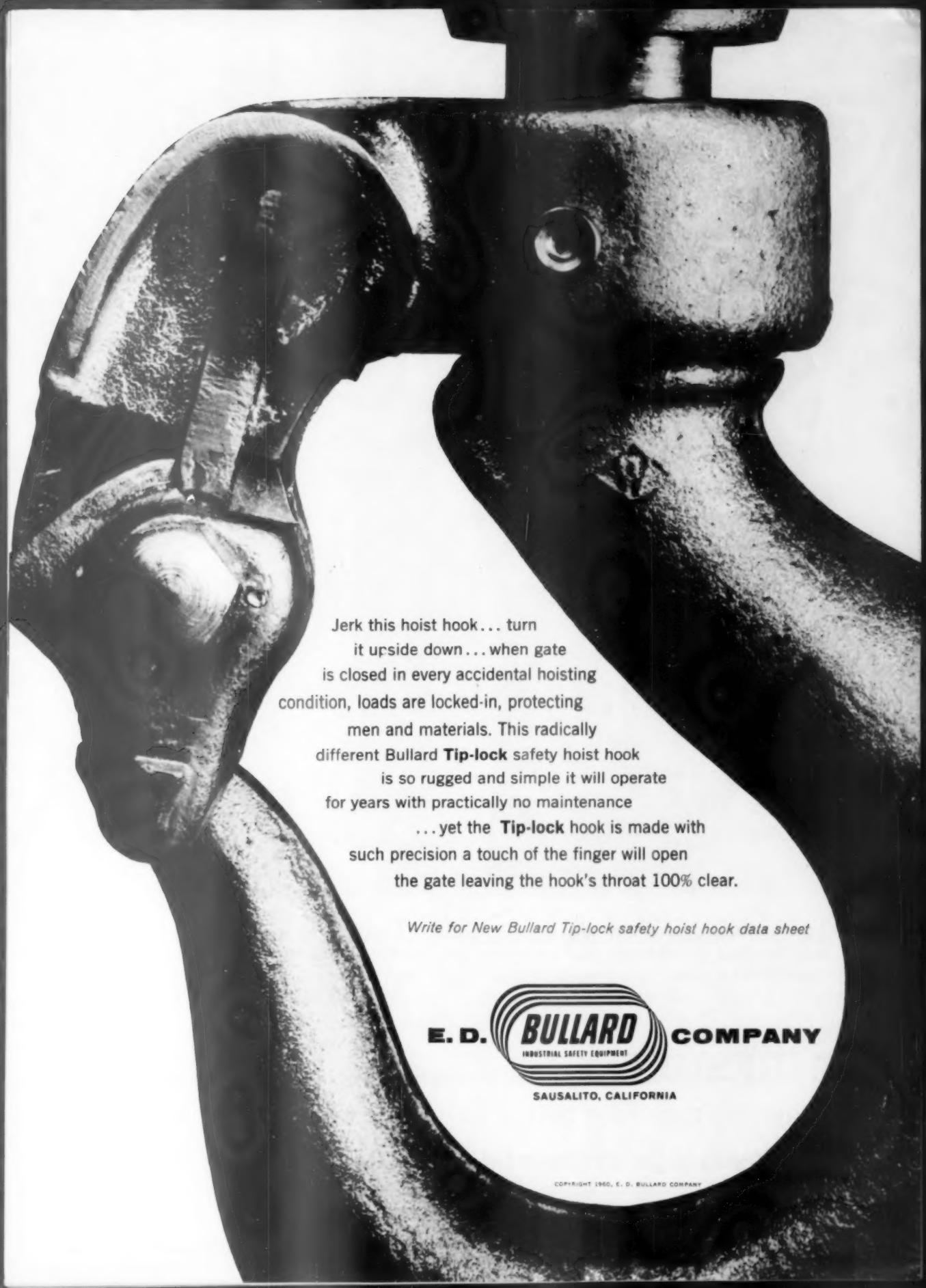
NATIONAL SAFETY NEWS is published monthly by National Safety Council. Copyright 1961 by National Safety Council. Printed in U. S. A. Second class postage paid at Chicago, Illinois, and at additional mailing offices. Subscription rates: $7.10 a year. Single copies $1.10. All prices subject to 10 per cent discount to National Safety Council members. Quantity prices for yearly subscriptions and single issues on request. Member Audit Bureau of Circulation.

This issue printed in a regular and a separate Canadian edition.

THE COVER

Modern hearing protection softens the blow of 99-108 decibel noise from the punch press. Men and women throughout industry, however, are still constantly exposed to harmful noise levels without protection (see page 20).

38,000 copies of this issue were printed



Jerk this hoist hook... turn it upside down... when gate is closed in every accidental hoisting condition, loads are locked-in, protecting men and materials. This radically different Bullard **Tip-lock** safety hoist hook is so rugged and simple it will operate for years with practically no maintenance ...yet the **Tip-lock** hook is made with such precision a touch of the finger will open the gate leaving the hook's throat 100% clear.

Write for New Bullard Tip-lock safety hoist hook data sheet

E. D. BULLARD COMPANY

INDUSTRIAL SAFETY EQUIPMENT

SAUSALITO, CALIFORNIA

1: Your employee's hand: It is industry's most basic tool. Its efficiency and safety are major concerns of management.

2: Edmont designs gloves to the hand: Compare this pattern with ordinary gloves. Note how it fits all over, conforms to hand shape and movements. Wing thumb is wide, fingers preflexed.

5: RESULT: Industry uses more Edmont coated gloves than any other for better handling, fewer nuisance injuries, employee satisfaction and reduction of gloving costs.

3: Gives gloves flexibility and grip: Correct fit and elasticity of materials give hands more working ease. Special coatings provide the positive grip needed for wet or slippery materials.

4: Makes them safer, longer wearing: By reinforcing additives, Edmont vinyl, neoprene and natural rubber coatings are given optimum resistance to abrasion, cutting, snagging and/or chemicals, as needed to *fit the job.*

Let us prove it by this test: Send brief description of your operation, materials handled and temperature condition. WITHOUT COST we will recommend correct gloves and supply samples for comparison testing on the job.

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CIRCLE 6 ON READER CARD

VOICE of the READER

Comments on topics of current interest are invited. They need not agree with the views of the editors

Find June Issue Useful

NEW YORK. Congratulations on the June issue of SAFETY NEWS. It is a valuable publication and should be helpful in all fields of safety.

We will make good use of it in our college training program.

— HERBERT J. STACK
Program Associate
Center for Safety Education
New York University

VANCOUVER, B.C. I have just received and glanced through the June 1961 issue of the NATIONAL SAFETY NEWS.

In my opinion, every copy of the NATIONAL SAFETY NEWS should be devoted to one particular subject such as this one. The fact that the information contained in this issue deals with "Communications" will make it a permanent part of my reference file.

May I suggest that when you put out a special issue in future, the subject of the issue also be printed on the binding as is done with the equipment issue.

— C. R. RUSTEMEYER
Safety-Training Department
Canadian Forest Products Ltd.

NEW YORK. The June 1961 issue of NATIONAL SAFETY NEWS will certainly be a valuable reference for those of us in safety and health education.

I, for one, will certainly be referring to it many times to obtain information on behalf of the many persons who write to us for guidance on visual aids in safety.

Certainly in time you will be revising the special film section. We should like to suggest that our film *The Owl and Fred Jones*, on the subject of changing habits, be considered for possible inclusion. The film shows how habits can be changed for better health. Although the habit of overeating is used for illustration, the technique applies to all kinds of habits.

— MARVIN H. BURTON
Health Education Assistant
The Equitable Life Assurance Society

We Pose a Hazard

GREENWOOD, S.C. With reference to your picture, page 30 of the June 1961 issue of NATIONAL SAFETY NEWS, Miss Risk is certainly risking her eyesight while driving a nail without eye protection.

— B. S. STRENGTH
Safety Supervisor
The Chemstrand Corporation

BUTLER, PA. Your record is about to go down the drain without the proper use of eye protective equipment.

— P. J. SWIERENCA
Division of Safety and Compensation
Pullman-Standard

JOHNSTOWN, PA. Miss Patricia Risk is "risking" her eyesight and your 1,953,686 accident-free man-hour record if she strikes that nail.

Please put safety glasses on Miss Risk.

I certainly hope Mr. M. Petersen's glasses are case hardened. If not, "Shame!"

— J. A. BERKEBILE
Safety Supervisor
Bethlehem Steel Company

We have a confession to make. Miss Risk (yes, that's her real name) wasn't really driving a nail. What we wanted to show, in addition to our award, was an award picture setup a little out of the ordinary — something with more life than two genial gentlemen and a plaque. That's part of our excuse. The other part is this: take another look at the picture and tell us — be honest, now — if you would have been thinking about chippers' goggles.

He Liked Risk Picture

NEW ORLEANS. I was very much impressed with the article on page 30 of the June issue of the NATIONAL SAFETY NEWS. I would also like to compliment whoever made the suggestion of putting a good-looking gal in the picture because this is what drew my attention.

— MILTON J. HATTIER
Director of Safety
Wesson Division
Hunt Foods and Industries, Inc.

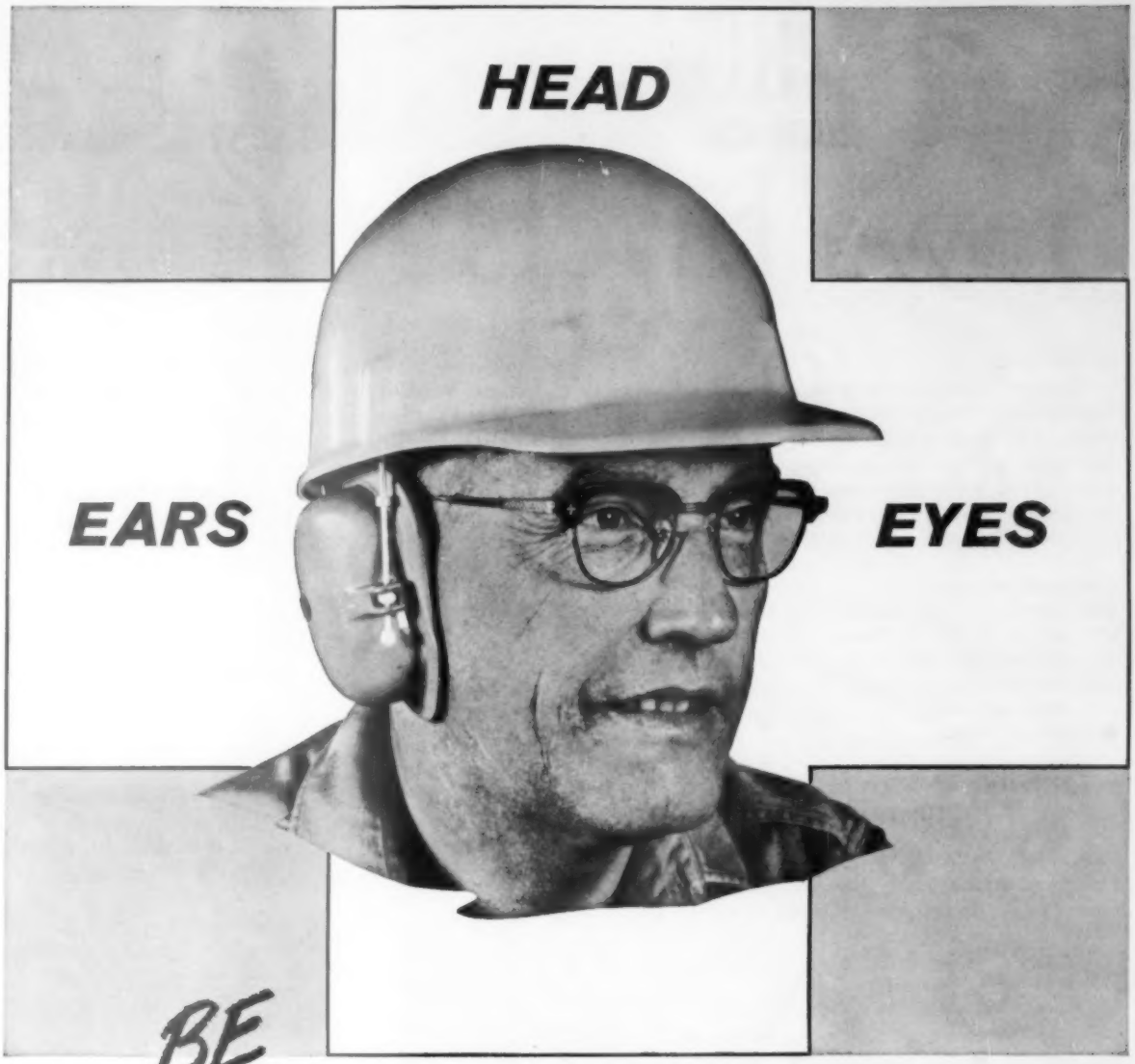
Smith's Article a Hit

ROCK ISLAND, ILL. The material set forth in L. C. Smith's article, "Do Your Actions Say What You Mean?" appearing in the June issue of NATIONAL SAFETY NEWS, has been called to my attention by one of our safety engineers as a good subject about which to conduct a safety meeting. In order to use the material in this manner we would like to reproduce the questions contained in the self-check test on safety attitudes and possibly to make some additions, omissions, or changes to fit the needs of the individual plant.

Before using this material we would like to express our interest and appreciation to you and to ask your permission for its use, as indicated, by our safety engineers in plants that we insure.

— FRED COOK
Safety Engineering Department
Bituminous Casualty Corporation

— To page 106



~~THINK~~ BE SAFE . . . ALL THE WAY!

Protection-PLUS coordinates by Bausch & Lomb

Only *enough* protection is enough. Obvious? Perhaps not. Too many safety products meet only the minimum standards. But too often it takes more than that to save an eye . . . or an ear . . . or a skull.

That's why the protection-*plus* in Bausch & Lomb safety products is so important to you. The *extra* margin of safety we build into them costs you not a penny more; it saves you the cost and grief of accidents that lesser products could not withstand. And there's *extra* safety, too, in the comfortable fit and good looks that make workers *want* to wear them.

Here's your dependable *single* source of the most head protection money can buy . . . at no extra cost. Safety frames and lenses for every kind of eye hazard. Safety hats and caps for every job, including electrical. "Quiet-Ear" Protector to muffle harmful sound yet permit on-the-job hearing. Call your supplier, or write to Bausch & Lomb Incorporated, 99721 Lomb Park, Rochester 2, New York.

BAUSCH & LOMB
SINCE 1853

Protection-PLUS Safety Products

protection + economy + worker acceptance

CIRCLE 7 ON READER CARD

news briefs

For the birds
A chemical plant reports that nesting birds seem to like their air considerably richer than the way Nature planned it. Robins tended to build their nests near hydrogen, carbon tetrachloride, and caustic potash fumes. Chlorine fumes seemed to attract starlings and sparrows. Every available spot under the liquid chlorine scalehouse roof was taken up with nests.

Automatic machine wasn't
The combination of an inoperative relief valve and the failure of the thermostat caused the explosion of a coffee vending machine. The blast cracked a concrete wall, broke large plate glass windows, and did extensive damage to walls and furnishings in the nearby area.

Wasps cause mishap
A boiler accident was caused by the nest of mud-dauber wasps. The insects built a nest around the spindle of the feed water regulator and low water cut-off so it could not turn. When the water level went down, the top rows of tubes in the boiler overheated and became unseated.

Trip souvenir
A policeman in Lockport, N.Y., Francis T. Sheehan, started downstairs, slipped on a pencil and fell to the bottom of the stairway. His injured back was treated at the Lockport Memorial Hospital. The pencil he had tripped on was a souvenir pencil from the same hospital.

Pop goes the fire
Stephen Stenstrohm, a soft drink sales manager, saw an automobile on fire on Highway 400 in Ontario. He pulled up beside the burning car, grabbed several polythene bags of pop, punched holes, and squeezed. He had to squeeze eight bags before the fire died down, but when the fire department arrived, all they had to do was laugh.

Foundry health hazards
Advancing foundry technology has introduced new health hazards, according to George Tubich of the Michigan Department of Health, who reported recent developments at the Michigan Industrial Hygiene Conference. Nickel carbonyl gas can be produced in the fabrication of nickel patterns. Carbon monoxide is formed as a decomposition product. Carbon tetrachloride is used as an inert carrier of nitrogen in refining certain white metal alloys. Since it is introduced into molten metal, phosgene is formed during the process. Treating mold surfaces for these metals with hexachloroethane in ether poses both an unknown hazard and a known hazard. Much is still to be learned of the toxicity of hexachloroethane, but the ether is flammable. Some graphite cores contain small amounts of silica which can become airborne.

Shark law
One of the least frequent but most fearsome accidents is shark attack. The first legislation designed to protect against shark attack will be introduced at the next session of the New Jersey legislature. Assemblyman Brady, who plans to introduce the bill, says that nonchemical methods of protection have proved to be ineffective in the past. One of the chemical repellants developed by the Armed Forces will be investigated by the state's commissioner of health for use in off-shore waters if the bill is passed.

It's no joke
On a stretcher in the Hamilton Foundry at Hamilton, Ohio are lettered the words: "Don't get carried away."

Short song
In New York City's Harbor Inn Restaurant, a diner dropped a coin in a slot and punched a button to hear "There'll Be a Hot Time In The Old Town Tonight." The juke box caught fire.

Bear bites logger
Another incident illustrating the value of safety shoes is reported from the logging industry. A lumberjack placed one of his feet near a hole at the base of a tree he was felling. Suddenly the head of an angry female bear appeared. Before the man could react, the bear had clamped down on his toes, peeling the leather off the steel safety cap. He acknowledged the safety shoes had saved him from being bear bait, but declined to pose for a reenactment of the incident.

Jim Saul

SAFETY DEVICE

GRIPPER® Snap Fasteners make work clothes far safer. It's as simple as that! They snap open with one quick tug—no fumbling around with buttons when seconds count. They work fast and sure every time. And they keep on working like a snap throughout the life of the clothes. Because Gripper Snap Fasteners won't bust—they eliminate the problems and hazards of missing buttons. Next time you phone your industrial launderer, specify the safer work clothes—the ones with foolproof Gripper Snap Fasteners on 'em. You can bet they'll pay off somewhere, sometime, for one of your employees. A product of **SCOVILL** Manufacturing Company, Waterbury, Conn. Also makers of Gripper Zippers.

CIRCLE 8 ON READER CARD

THE SAFETY VALVE

Nothing human is alien to me
—TERENCE

Super Market Surprises

Visitors to the recent convention of the Super Market Institute in Chicago were treated to a preview of products and gadgets of interest to merchant and customer.

Among the conventional displays was one amazing piece of equipment —a power-driven shopping cart. Battery power propels it and all the customer has to do is steer it. Push a couple of buttons on the handle bar and it's off.

I didn't see the show and all I know about it is what I read in the paper. But it sounds like a double Alka-Seltzer headache for both store personnel and the mothers of space-age cadets.

However, the possibility of motor traffic hazards in the super market is probably slight. Not the least of the obstacles would be cost and maintenance.

A more practical innovation was a scheme to discourage cart borrowers. A magnetic field can be laid around the market area and when the cart is pushed beyond it, the wheels lock.

And how about some scheme to discourage leaving carts in the middle of parking spaces?

A Matter of Terminology

Every so often the terms "flammable" and "inflammable" come up for discussion. They have identical meanings and you will find them both in any up-to-date dictionary. Mine *(American College)* defines them thus:

Flammable: easily set on fire; combustible; inflammable.

Inflammable: capable of being easily set on fire; combustible; also: easily roused to passion; excitable.

Those of us who are engaged in accident prevention or fire protection may not realize that these terms may confuse some laymen.

Back in the 20's the NFPA and the NBFU started a campaign to popularize the shorter form. NSC and many technical societies liked the idea and adopted it in their publications. Finally, the dictionaries recognized it. And the oil companies, after studying the legal angles, followed suit.

On the highways, we don't think the public is likely to be misled by inscriptions on tank trucks. If they contained milk or molasses, would it be necessary to carry a warning or reassuring label? These oil trucks, I feel, are doing a lot to make the term understood by the public.

With domestic products there is, perhaps, some possibility of confusion. In the July NSNEWS, Howard T. Fisher of Northwestern University's Civil Engineering Department said that children brought up on the word "flammable" when first coming in contact with "inflammable" will have no reason to suspect its true meaning and interpret it the exact opposite of the facts.

Professor Fisher conceded that it would be desirable to abolish the word "inflammable" so it becomes completely obsolete, a difficult if not impossible objective.

Professor Fisher suggests substitution of "burnable" and "unburnable" for the controversial terms, admitting that neither of the substitutes carries the connotation of explosiveness. And "burnable" would describe a wide range of materials from slow-burning and self-extinguishing materials to highly volatile and explosive liquids.

Just to check on the prevalence of "flammable" and "inflammable" in labeling products found in the home, I took an inventory of the cans of paints and thinners in the basement workshop. I found that *flammable* won four to one, and whichever term was used, it was preceded by *danger* or *caution*. A can of contact cement was labeled *Safe—Non-flammable*.

It looks as though the word *flammable* is here to stay.

Language Barriers

From the State Public Library in Leningrad came a recent request for an exchange of publications with NATIONAL SAFETY NEWS. Enclosed was a list of 147 technical and semi-technical publications, all in Russian, of course.

"We sincerely hope that establishment of regular exchange of publications will be of mutual benefit and will serve the cause of further development of friendly relations between our countries," the letter concluded.

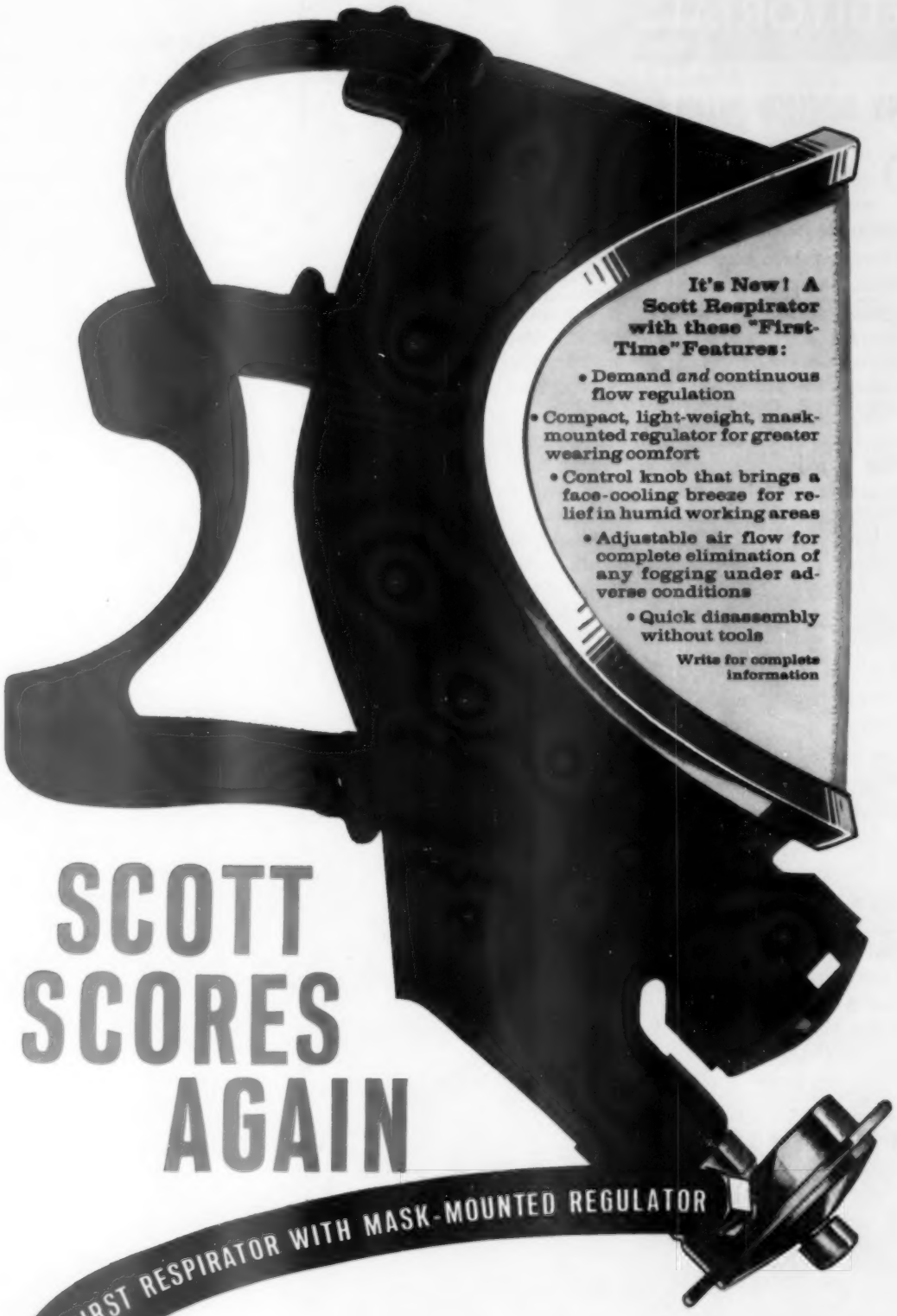
In acknowledging the request, the Council admitted with some embarrassment that no member of the staff was fluent in Russian.

But if NSNEWS could really improve relations between the countries, it would be well worth the cost of a complimentary subscription.

Me Too!

"I find that before you retire you promise yourself to do all sorts of things, but a great part of your time is taken up with putting them off, and eventually you devise a system of putting things off that takes up all your time." Sir Sydney Smith, expert on the medical aspects of crime, quoted by McCandish Phillips in New York Times and requoted by *Reader's Digest*.

Carman Fisk



It's Now! A Scott Respirator with these "First-Time" Features:

- Demand *and* continuous flow regulation
- Compact, light-weight, mask-mounted regulator for greater wearing comfort
- Control knob that brings a face-cooling breeze for relief in humid working areas
- Adjustable air flow for complete elimination of any fogging under adverse conditions
- Quick disassembly without tools

Write for complete information

SCOTT SCORES AGAIN

THE FIRST RESPIRATOR WITH MASK-MOUNTED REGULATOR

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CIRCLE 9 ON READER CARD

EDITORIALS

WHY BOTHER WITH NOISE CONTROL?

ON PAGE 20, hearing expert Roger Maas describes the discouraging process of interviewing people concerned with hearing protection in hundreds of plants. It was discouraging because so many reported apathy at all levels.

There are three ways to tackle industrial noise: reduction, isolation, and protection.

Putting muffs on a worker's ears is a quick way to protect his hearing, if he will hold still for it. Considering the stubbornness and indifference encountered, though, other measures must be taken while the slow process of selling hearing protection is under way.

Reduction is the best, if it proves practical. It can be expensive to redesign noisy parts, restore balance to vibrating rotating parts, replace metal rollers with rubber, and put cushioning material under feet of machines. There are many steps that are not so expensive, though, such as damping machinery covers with undercoating material, or putting mufflers on release ports where compressed air or gas escapes. Reduction valves in the lines can cut noise without reducing efficiency.

A new way of doing a job can often quiet the operation:

Squeeze riveting rather than impact riveting

- Welding rather than riveting
- Electric rather than air power
- Mechanical rather than air ejection
- Grinding rather than chipping
- Hot rather than cold metalworking
- Belts rather than gears
- Plastics rather than metals

• When noise is reduced as low as it can go, and the level is still too high, isolation is the next step. This can be easy and inexpensive, or complicated and costly. One jet silencing structure cost as much as the remainder of the installation. Isolation helps everyone except those who must work near the operation.

For these, muffs or plugs – or both – provide the answer.

NO MAN IS AN ISLAND

This quotation, though it was taken from some of the lesser known works of the author, has become famous as the source of the title of the late Ernest Hemingway's greatest novel:

> No man is an *Iland*, intire of itselfe; every man is a peece of the *Continent*, a part of the *maine*; if a *Clod* bee washed away by the *Sea*, *Europe* is the lesse, as well as if a *Promontorie* were; . . . any mans *death* diminishes *me*, because I am involved in *Mankinde*; And therefore never send to know for whom the *bell* tolls; It tolls for *thee*.
>
> *Devotions* – 1624
> John Donne

CONSULTATION CORNER

Questions on accident prevention, fire protection and occupational hygiene are answered by mail. A few are selected for publication

By L. C. SMITH, Industrial Department, NSC

Precautions in Using Compressed Nitrogen

Question: It is our intention to test safety valves used on pressure vessels for carrying liquefied petroleum gases with compressed nitrogen. The valves are to be tested at 250 psi, using bottled nitrogen. Since the nitrogen bottles bear the notice, "Do Not Connect To Oil-Lubricated Equipment," we were wondering if we were overlooking some possible hazard?

Answer: Nitrogen is an inert gas. Therefore, it presents no problem of fire or explosion. There are, of course, certain hazards connected with the use of any compressed gas at the pressures you indicated. A supplier of compressed nitrogen made the following comments concerning this problem: "The stencil on nitrogen cylinders which reads 'Do Not Connect to Oil-Lubricated Equipment' does not mean that there is any hazard involved, or any reason that the nitrogen content in the cylinders cannot be permitted to come in contact with oily surfaces in the valves being tested. The only hazard involved, in connection with oil, is its being permitted to enter nitrogen cylinders, or from the contamination of the valves with oil. These cylinders are also used for pressurizing and purging oxygen lines. Therefore, we must insist that customers exercise the necessary caution to prevent cylinders from becoming contaminated with oil and other foreign substances. Wherever there is a possibility that equalization of pressure will cause oil or other foreign substances to enter the nitrogen cylinders, check valves should be used in the systems.

"Many nitrogen cylinders still have the same valve as that used on oxygen cylinders. Should the valve outlet on a nitrogen cylinder become contaminated by oil, the use of a regulator on it which might later be used on an oxygen cylinder could cause an explosion."

In brief, the problem seems to center around avoiding contamination. There is a program under way for replacing all valves on nitrogen cylinders with a standard inert gas valve which would prevent interchanging. However, until this is accomplished the necessary precautions to prevent contamination should be exercised.

Hazards of Fumes from Diesel Powered Buses

Question: I have been requested to obtain information regarding the effect of diesel oil smoke on public health. The problem is of great concern here because all the public buses use diesel oil. According to local medical officers the smoke is dangerous to public health.

We would be very grateful if you could send us materials or any information regarding the matter in order that we may pursue a course of action.

Answer: A properly adjusted and maintained diesel engine will produce only a slight amount of smoke. When operating properly this will be a slight smoke with a blue haze which is almost invisible. When the engine is not operating properly incomplete combustion occurs which does create some irritants. The gases emitted from a diesel exhaust, as a result of incomplete combustion of the fuels, are aldehydes, oxides of nitrogen, and carbon monoxide. The odor is due primarily to the aldehydes. Concentrations found in traffic areas are usually low enough that only the objectionable odor is noticeable. When concentrations get higher, sneezing, coughing, and eye irritation may occur. It is very likely that the diesel engines are not operating properly when this condition exists.

Diesel engines produce negligible amounts of carbon monoxide under favorable conditions. Where inadequate ventilation may prevail, as in industrial operations, the aldehydes from diesel engine exhausts may induce a marked bronchiolitis. According to some published reports diesel exhaust rarely produces harmful amounts of nitrogen dioxide.

It is possible to reduce the amount of pollution from diesel engines by installing control devices on the buses such as catalytic combustion units on the exhaust. However, diesel buses operated in the open air, such as you described in your letter, would probably create more of a nuisance problem than a health problem.

PLANNING TO FLY TO THE NATIONAL SAFETY CONGRESS?

NORAD (North American Air Defense Command) has announced an air defense exercise that will ground all non-military aircraft for a 12-hour period, from 1:00 p.m. Eastern Daylight Time, Saturday, October 14, to 1:00 a.m., Sunday, October 15. The entire United States and Canada will be affected.

Since this exercise will immediately precede the opening of the National Safety Congress in Chicago on October 16, this notice is issued as information to any Congress delegates who might have been planning air travel to Chicago during the specified period. Any such delegates will of course want to make necessary changes in the timing of their travel and hotel reservations.

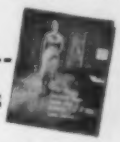
When wax contains Du Pont anti-slip LUDOX® floors are safer...and they rebuff mirror-bright!

Floor wax containing "Ludox" colloidal silica is safer to walk on, and *stays* that way. When you rebuff this wax to give it a gloss as good as new, the anti-slip qualities remain. Tiny silica particles of "Ludox" provide millions of "grippers" that stay on the job, greatly lessening the tendency to slip. Other wax properties sacrificed? Not at all. You get the same lasting beauty and easy maintenance of regular fine waxes.

"Ludox" is Du Pont's registered trademark for its colloidal silica . . . an ingredient used by formulators of quality wax. Floor wax containing "Ludox" is available everywhere. If you'll mail the coupon, we'll send more information and a list of suppliers.

DU PONT REG. U.S. PAT. OFF. **LUDOX®** colloidal silica

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



E. I. du Pont de Nemours & Co. (Inc.)
Industrial & Biochemicals Dept., Rm. 2545NS
Wilmington 98, Delaware

Please send more information on floor waxes with "Ludox" and a list of suppliers.

*Name*_____

*Firm*_____

*Address*_____

*City*_____ *State*_____

CIRCLE 11 ON READER CARD

DIARY OF A SAFETY ENGINEER

The best way to avoid being fired is to quit. The Project's new safety assistant makes it just under the wire

CLOSE FINISH

Fiction by BILL ANDREWS

AUGUST was a blistering hot month—and a month in which my temper was often as hot as the weather.

Joe Burton, my brand-new assistant, was responsible for my frequent explosions of temper.

I've already described (August NATIONAL SAFETY NEWS) his first few days on the job, which produced some howling crisis about twice every eight hours.

The second week he slowed down a little—he managed to sabotage the safety program only three times in five days. But the last of those three was a beauty! He actually managed to produce, singlehanded, a wildcat strike.

Not that Joe wanted to do anything of the kind. But he couldn't resist the temptation to parade his imagined wisdom in one of the plants on the Project, and when the general foreman told him to go away and stop bothering him, Joe proceeded to bend the ear of the first willing listeners he could find.

In the little circle of men he talked to in the plant cafeteria was, as luck would have it, an eager-beaver grievance committee chairman. Joe certainly gave him something to work on. The first I heard of the whole issue was when the plant manager called me up to ask why, if I really felt his supervisors were criminally negligent, I didn't report the fact to him for managerial action.

It took me two days to unwind the snarled cross purposes—a job made more difficult by the fact that the supervision actually had been lax in certain important safety matters.

I had made up my mind to fire Joe just as soon as things quieted down and I had time to tell him off. But when I talked the matter over with my wife that night, Sue pointed out with perfect justice that I had never explained to Joe the complicated problems involved in winning management to corrective action. She also told me I had an obligation to a young man to try to get him straightened out before I quit on him.

So, the next Monday I had a long, heart-to-heart talk with Joe. What I said hurt—but he took it pretty well, on the surface. He agreed that he had been repeatedly stubborn and pig-headed, and that he was just beginning to learn how much he had to learn about industrial safety work. He begged for another chance, and I gave it to him.

I kept him in the office for a couple of days, and I must say he showed some aptitude for picking up some of the technical savvy involved in machine guarding and material handling. He was still a total blank on the interpretation of statistics, but that didn't worry me very much.

Finally I turned him loose again on inspection, and for a solid week he plodded around the project without getting into any fights with people. His reports were in good order, and he made a couple of constructive suggestions about particular situations. I duly complimented him on those, and I had Bert follow them up to get action on them.

Last week, Joe was very quiet in the office. His inspection reports kept coming in, but there were no more flashes of constructive insight. I suspected that he was goofing off, so I did a little inspecting behind him. There was just about no correlation between his rating of the housekeeping of the plants he reported on and what I found a few hours later.

So last Wednesday I called him in and demanded an explanation.

Instead of an explanation, I got a counter-tirade. I was, he told me, an old-hat, compromising, stick-in-the-mud, who didn't appreciate new ideas and new approaches. He couldn't, he assured me, waste his valuable time working for such a backward safety department. So he got his resignation in before I could fire him—which is all right with me.

Friday, I interviewed Louis Jerris, the other Tech graduate who had written such a poor letter of applica-

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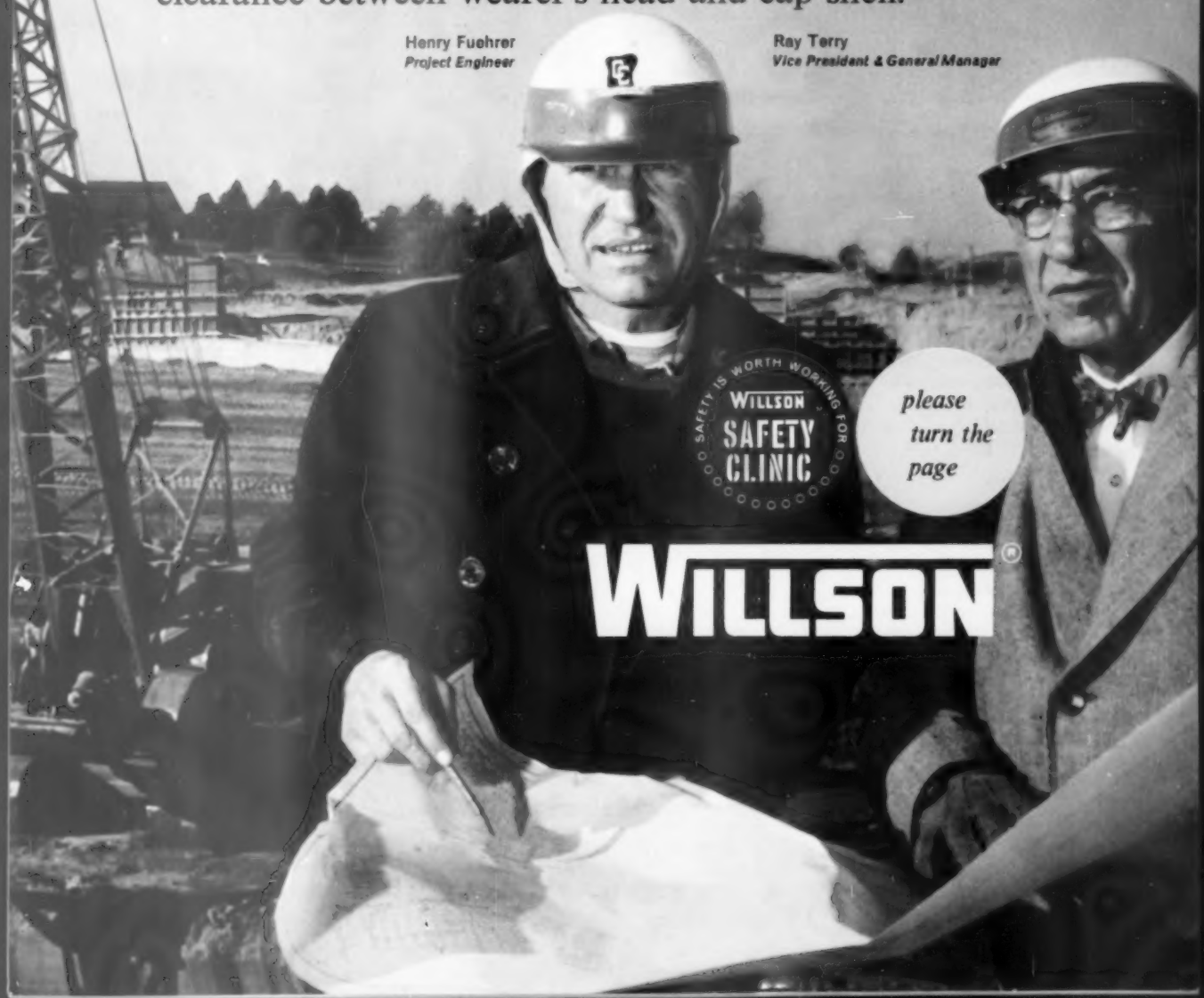
Hard-Cap Confidence at Condon-Cunningham

Things began to happen when Ray Terry, vice president and general manager, Condon-Cunningham, Inc., decided *mandatory protection* was the way to educate construction workers. A perfect safety record . . . with at least one life saved . . . established confidence in Willson Super-Tough® phenolic hard caps. This confidence goes beyond ability of Willson caps to pass penetration tests. Geodetic® suspension, for one thing, gives *plus protection* against shock loads. Confidence about people, too—*tamperproof* Willson design assures safe clearance between wearer's head and cap shell.



Complete head protection from one source: Willson safety caps and hats with phenolic, fiberglas, dielectric, or aluminum shells; variety of colors; Geodetic, center-crown string, or lace-in suspension. New universal winter liner fits any hat, cap, or suspension. Flannelette and quilted winter liners. Chin straps. Quick-mounting attachments for welding helmets, safety goggles, and faceshields. Portable headlights and brackets.

Willson Geodetic® suspension gives impact protection, plus shock dissipation

In selecting protective headgear, Vice President and General Manager, Ray Terry, looked beyond traditional concepts of head safety. He considered both magnitude of impact and rate of absorption by the skull.

This is where Willson Geodetic suspension, with exclusive "great circle" straps, offers greatest protection against the *total hazard*—injury through direct contact and shock.

"One of our men owes his life to Willson head protection," says Mr. Terry. "Willson's phenolic cap averted scalp laceration when it stopped a 2 x 4's 50 ft. fall. Geodetic suspension prevented brain damage. Not once has production been interrupted by a head accident since we standardized on this combination."

Willson's Geodetic suspension forms snugly over the "great circle" lines of the head. Chance of either inbending or outbending the skull is greatly reduced. The wearer can sustain a much heavier blow without injury.

Besides being comfortable, this scientific suspension grips the head in a way that prevents slipping and tipping when the cap is struck by an angular blow. Result is protection which:

1. Dissipates impact force over 13 sq. in. of cranial surface.
2. Avoids headgear "bottoming," shifting, or tilting.
3. Makes vital 1¼" clearance between head and protective shell "tamperproof."

Workers at Condon-Cunningham like the comfort of Willson headgear. Size-adjusting leatherette sweatband fits any head. Super-Tough® phenolic hats and caps endure high impact, piercing, on-the-job abuse, and temperature changes — meet or surpass all federal impact test specifications.

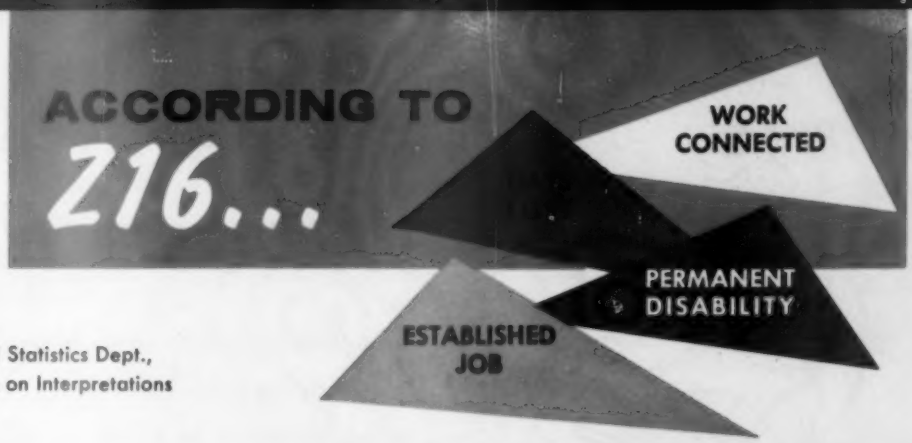
Safety equipment distributor, Interstate Machinery & Supply Co. of Omaha provided Condon-Cunningham complete safety counseling on head protection.

Contact your Willson distributor for head, eye, ear, and lung safety.

SAFETY IS WORTH WORKING FOR WILLSON SAFETY CLINIC

safety is worth working for **WILLSON**®

Willson Products Division
Ray-O-Vac Company
Reading, Pennsylvania
In Canada: Safety Supply Company



By H. GENE MILLER

Manager, NSC Research and Statistics Dept., and member, Z16 Committee on Interpretations

Back Injuries Without Accidents

MANY INJURIES arise out of circumstances which cannot be classified as accidents. This point is easier to understand when it is noted that the standard includes in "injury" occupational diseases as well as work-connected disabilities.

With occupational diseases, the standard says these will be considered work injuries if they are caused by environmental factors, the exposure to which is peculiar to a particular process, trade, or occupation. As can be seen, no "accident" need be involved to have a reportable injury of this kind, although such injuries could arise out of accidents, as well.

Back injuries can occur, too, without accidents, although in this case, at least some physical act must be involved. The standard refers to such physical acts as "incidents." However, if only an incident is involved, there must be a relationship between the incident and the disability.

There seldom has been any controversy over charging back injuries that result from improper lifting. Yet this act is really an activity or incident and not an accident.

The following cases illustrate some of the injury circumstances which the Committee on Interpretations has ruled satisfy the standard's provision as incidents.

Case 452. An employee worked all day on his knees in a bent-over or stooped position because of lack of head room. Although there was no accident or fall, and there was no excessive strain in using his hand tools, the employee developed a sore back which resulted in several days' disability. The question raised was whether this activity met the requirements of Section 5.2 of the standard.

Decision: The committee ruled this disability should be included in the company's injury rates, concluding that working in a bent-over or stooped position all day should be considered an incident as contemplated by the standard.

Case 543. An employee engaged in digging a trench in which to bury a run of pipe was working in an area which was crossed by several overhead pipes. Because of the limited space under the pipes, he had to work from a squatting or kneeling position.

On the first day he worked in this position on and off for about five hours, taking time out to stretch or to perform other tasks. On the second day, after working about three hours, the employee complained that his back was sore. The soreness persisted, so he was taken to a physician for examination. There was no indication that an accident had occurred, such as a slip, twist, or fall.

At first the physician reported the condition as acute back strain, but later tests revealed that the employee had a protruded herniated intervertebral disk. This was corrected by surgery.

Decision: The committee ruled that this injury should be included in the work injury rates. Without information to the contrary, the committee concluded that the disability could have arisen out of the unusual circumstances under which the employee was working.

Case 743. An employee whose regular occupation was operating a diesel crawler tractor reported he was unable to continue work because of a painful back disorder. He stated that for several months prior to this time he had experienced trouble with his back, and that home treatment of massage and heat lamp had kept him able to work. He knew of no blow, strain, or other mishap which could have led to his condition.

The man was admitted to the hospital where the physician diagnosed the case as myositis of para-vertebral muscles caused by constant vibration and shock on his job as tractor operator. Because the case was rejected by the Workmen's Compensation insurance carrier, the company questioned whether the case should be included in their rates.

Decision: This injury should be considered industrial and included in the company's work injury rates. The committee believed the constant vibration attending the employee's job as tractor operator satisfied part (a) of 5.2, and since the doctor stated that the disability resulted from this activity, part (b) was also satisfied.

This series of articles is presented to provide a better understanding of the standard injury reporting procedure, to accomplish more uniformity in the classification of injuries, and to permit the safety man to rule on more of his own cases. The wording and intent of the Standard will be cited, illustrated by rulings of the Committee on Interpretations.

Hearing Protection—*Whose Failure?*

Nurses and safety men blame themselves when hearing protection programs fall flat. Interviews with personnel in 1,148 noisy plants point to the causes of failure and ways to reverse the trend.

Some managements take the ostrich attitude.

By ROGER MAAS, Ed. D.

Hearing Consultant, Employers Mutual Liability Insurance Company

Others say their plant needs no program.

WILL WE ever be able to convince people to wear hearing protection on noisy jobs? Yes, but it won't be any easier than it was to get them to wear eye protection or foot protection.

Many veteran safety men say it is no different from what they have learned in the past with shoes, safety glasses, hats, gloves, and respirators. After all, hearing protection programs are for the most part only five or six years old.

Other safety directors and nurses say the problem of getting hearing protection on the worker is tougher than selling all the rest of the protective equipment put together. Let's take stock to see what we are up against.

The average worker accepts noise as a normal part of his occupation. Man is highly adaptable. He seldom, if ever, complains about the noise associated with his work. Until each worker is certain that continued exposure to noise without protection damages his hearing, he

Intense, high-frequency noise from this band resaw operation would leave an unprotected worker with ringing ears, shattered nerves.

The tremendous noise generated by the hammer ram's impact on the billet a split second after this photo was taken reached the workers' ears only as a thud. Comfortable muff-type ear protection can mean the difference between impaired and preserved hearing for men on such jobs.

Many workers complain ear plugs are uncomfortable.

Men who wear muffs may take a lot of kidding from un-muffed fellow workers.

will not be much concerned. He certainly will not ask for ear plugs. Even if a worker has been informed of the effects of noise on the hearing mechanism, why should he worry about something that actually may not take place for at least 20 or 25 years?

It is very much the attitude that people in our part of the United States have toward Civil Defense. People in the Midwest think it is most improbable that we will ever be attacked, so why bother about disaster or evacuation procedures? Likewise, cigarette smokers are being warned constantly about the potential threat of lung cancer, yet how many smokers take these grave warnings seriously?

To learn more about this problem of ear protection, the Employers Mutuals Liability Insurance Company of Wisconsin recently conducted a study based on 1,148 plants having sufficient noise exposures to warrant the wearing of hearing protection devices. The information was obtained from nurses and engineers who actually worked with these plants.

1. How many noisy places of work had reasonable success with ear protection for a period lasting six months or more?

The answers revealed that we have very few successful hearing protection efforts in our plants. The actual figure was 22.5 per cent.

2. What, in your opinion, are the primary reasons the use of ear protection has failed in plants where the promotion has been unsuccessful?

Seventy-five per cent of the respondents indicated the programs failed because of lack of management interest and support. To try to summarize the full meaning of this question, I would like to present verbatim the answers we received.

a. "Most managements take the ostrich attitude toward the noise problem."
b. "Management fails to sell employees on the need and value of ear protection."
c. "Management is afraid. Management won't admit it has a problem until specific laws are passed."
d. "Reluctance of management to support hearing conservation measures because of bad

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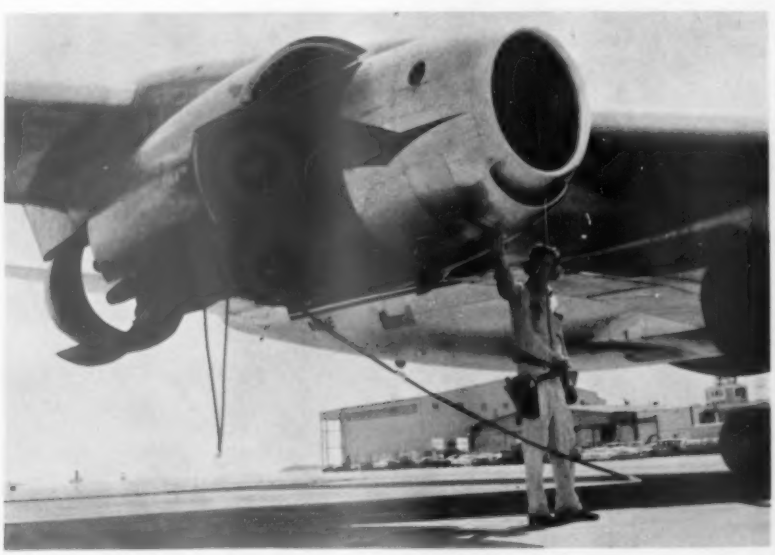

Ear muffs protect this DC-8 electrical maintenance man from injurious noise of nearly 140 decibels. Intensity of jet aircraft engine noise has prompted widespread use of hearing protection in the industry. Awareness of the dangers of less spectacular noises is gradually increasing.

Large, high-speed buffing wheels on this multiple buffing operation develop high-frequency noise of great intensity. Muffs are a must.

IDEAS THAT WORKED

Devices and Ideas to Help Your Safety Program

By **ARTHUR S. KELLY,** Industrial Department, NSC

Mousetrap Helps Build Better Safety Program

WANTING TO PROVIDE supervisors with a graphic reminder that accident potential must always be guarded against, this safety man set mousetraps and sent them to department heads, foremen, and leadmen. (The trap is fixed so it won't go off.)

The message lettered on the wooden base of the trap reads:

Be alert for accident traps!
Do any exist in your department or area?
NOW IS THE TIME TO ACT –
Control accident causes,
Prevent injuries.
WILL the trap be baited?
WILL it be sprung?
It need not be.

A machine lock-out tag is attached to the trap, with its message altered to read:

DANGER! Do not start this (type) machine. (That is, the accident machine).

Signer of the tag, and originator of the idea, is R. A. Koy, personnel superintendent, United States Gypsum Co., New Orleans, La.

AUGUST WINNER

Judges liked Archie Henderson's use and reuse of posters drawn by children of employees. The posters were entries in a company-sponsored contest on the theme "My Dad Says . . . " Twenty-five winning posters were rotated on company bulletin boards. Then Henderson got more mileage out of them by publishing a booklet of suggested five-minute safety talks illustrated by reproductions of the posters. Henderson is safety director of the General Motors Diesel plant, London, Ont., Canada.

Slogans Somersault For Safety's Sake

FOR ANYONE WHO remembers the delightful toy, the idea pictured here is based on "Klik Klak Blox." The simple but fascinating device is constructed as follows:

Three cardboard rectangles were laced together with cloth tape in the classic "Klik Klak" fashion. Six oval patches of fluorescent color coated paper were cut, lettered with the desired messages, and pasted on the six sides of the three rectangles.

The top rectangle is supported by an extension of a small electric motor's shaft, which oscillates it slowly. (The motor's base is fixed to the plate seen through the upper portion of the wire mesh.)

Each time the motor rotates the rectangle 90 degrees from the vertical, the "klicking" and "klaking" commence, reversing all three rectangles and exposing three new messages.

The unit shown carried home and work first-aid advice. ("Infection stopped at early stages cuts loss of time and wages." "Make your child poisonproof by keeping your poisons childproof.")

P. J. Rogers, field gauger, Shell Pipe Line Corp., Brownsfield, Tex., thought up the adaptation, which he calls a slogan changer, to help teach first-aid classes.

Bowling Scoreboard Records Accident Records

APPROPRIATE FOR SEPTEMBER is this "Safety Bowling Sweepstakes for the Transportation Department Championship," a competition scored like bowling, but based on safety performance.

Two divisions of the department form the teams. Team members are five areas within each division.

Strikes are scored for each frame (month) that an area has no personal injury.

Spares are marked when an area passes a month with some personal, but not disabling, injury.

Disabling injuries earn the area a "blow."

A special system of handicapping was devised to offset the varying man-hour exposures of the different teams and team members.

The idea, implemented by the Duluth Missabe & Iron Range Railway Co., Duluth, Minn., was forwarded by J. A. Dillan, the company's superintendent of safety and welfare.

MISSABE DIV.	Jan. 1	Feb. 2	Mar. 3	Apr. 4	May 5	June 6	July 7	Aug. 8	Sept. 9	Oct. 10	Nov. Extra Balls	Dec.	TOTAL
1 North End	19	38	53	58	65	69	69	77	81	101	121	131	131
2 Road	20	50	78	96	104	124	143	163	180	187	203	209	209
3 Proctor	18	26	46	66	83	102	121	135	139	145	164	173	173
4 Skelton-Mal.	7	26	45	62	69	75	95	110	115	135	153	161	161
5 Docks	19	39	59	79	93	97	115	133	151	171	191	201	201
IRON RANGE DIV.	5	13	19	22	24	27	31	34	39	43	48	52	875
1 North End	20	37	44	64	78	82	102	122	142	172	192	202	202
2 Road	20	40	60	75	80	100	112	114	126	128	135	145	145
3 Two Harbors	28	46	66	84	102	120	137	144	162	180	196	202	202
4 Ely-Embon	20	40	60	76	82	102	122	142	162	182	202	212	212
5 Docks	30	58	78	88	88	90	94	114	134	154	174	184	184

WIRE from WASHINGTON

By HARRY N. ROSENFIELD
Washington Counsel
National Safety Council

Mining Safety Study Urged

THE 1961 CONGRESSIONAL session has extended beyond the date set by law for its normal adjournment.

Industrial Safety. Congress approved H.R. 6441, and the President signed the Federal Water Pollution Control Act amendments into law as Public Law 87-88. The law expands the federal program and increases annual authorizations for federal grants to communities to $570 million over a seven-year period.

A subcommittee of the House Education and Labor Committee favorably reported H.R. 8341 to the full committee. The bill authorizes the secretary of the interior to make a two-year study and submit "recommendations for an effective safety program" for metal and nonmetallic mines (excluding coal and lignite mines). The study would cover, among other matters:

1. Causes of injuries.
2. The relative effectiveness of voluntary against mandatory reporting of accident statistics.
3. The relative contribution to safety of different forms of inspection program sanctions.
4. The effectiveness of health and safety education and training.
5. The scope and adequacy of state mine-safety laws applicable to such mines and the enforcement of such laws.

The United States Department of Labor amended its regulations which declare occupations involving exposure to radioactive and ionizing radiations to be particularly hazardous for the employment of children between 16 and 18 years old. The amendments are intended to conform to recent recommendations of the National Bureau of Standards and the Federal Radiation Council on radiation hazards.

The Department's Bureau of Labor Statistics issued a report on injuries and accident causes in the canning of fruits and vegetables. The report stated that "the lack of mechanical handling equipment or insufficient help in moving materials by hand was the most common hazardous working condition found in the industry." The Bureau also found "more than half of the unsafe acts consisted of assuming unsafe positions."

The Congressional Committee on Atomic Energy held hearings on nuclear accident indemnity.

The Atomic Energy Commission amended its regulations to approve an endorsement to nuclear liability insurance policies issued by two nuclear liability insurance syndicates.

Traffic Safety. The Congress approved S. 1922, and the President signed this new housing act into law as Public Law 87-70, thereby initiating a program of federal aid for mass transportation planning and pilot projects (see "Wire," July 1961).

A subcommittee of the House Committee on Government Operations approved H.R. 6433 for submission to the full committee. The bill would establish a department of urban affairs and housing, whose official responsibilities could cover the field of mass tranportation planning.

The General Services Administration directed that all cars bought for the federal government beginning with the 1962 models shall be equipped with a "blowby" device (whose purpose is to reduce air pol-

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THIS MONTH IN WASHINGTON

Favorably reported by the House Education and Labor Committee is a bill authorizing a two-year study of injury causes, accident reporting procedures, inspection programs, and effectiveness of safety training, in metal and nonmetallic mines (excluding coal mines). The results of the study will be used to assess existing mine-safety laws.

Amendments to the Federal Water Pollution Control Act increase authorizations for federal grants to $570 million over a seven-year period.

The U.S. Department of Labor's Bureau of Labor Statistics issues a report indicating that lack of mechanical handling equipment or undermanned manual moving operations constituted the most hazardous working condition found in the fruit and vegetable canning industry. Assuming unsafe positions accounted for more than half the unsafe acts.

By J. A. FISH

Former Safety Engineer,
Niagara Falls Plant,
E.I. du Pont de Nemours & Co.

Abuse has thinned the effect of accident prevention's sacred word, but judicious use can help restore its impact

Is Safety Overworked?

AMONG words in the English language, one of the most abused and misused is *safety*. So much emphasis on this one word has created a distaste and often disdain for anything attempted in its name.

Resentment is often generated in the minds of many persons – people who should benefit from efforts made to keep them healthy and in one piece – whenever a suggestion is made that their conduct is in any way hazardous.

Safety campaigns, *safety* slogans, *safety* rules, *safety* equipment. *Safety* this, and *safety* that!

A man working on a ladder without nonslip feet is likely to smile when reminded his ladder isn't fitted with safety feet. He may even smirk when told that under certain conditions he should wear safety shoes, safety goggles, safety hat, and so on.

Chagrin really builds when the word *must* is teamed up with safety. A person *must* obey safety rules, *must* wear goggles and safety shoes.

The word *safety* means different things to different individuals. Too often it means something that applies to the other fellow. Therefore, the suggestion intended to be helpful is often laughed off or disregarded. Such an attitude frequently has disastrous results.

What to do about it? What is the real meaning of the word? Webster says:

"Safety – freedom from danger, injury, and damage." That definition seems to cover the usual meaning completely. And there seems to be no other single word or even a brief combination of words that will approach that definition.

Therefore, the word must be retained and used judiciously in any organized effort to reduce accidents and injuries. Study and practice will suggest numerous ways to avoid its too frequent use.

When assigning a job to a workman, a supervisor can mention that a hard hat should be worn to protect the head or that goggles are necessary in that particular job location.

At the same time he can convey the idea that suggestions are for that particular workman on that particular job and tell him why precautions are necessary.

Safety instructions can be given as a part of regular routine and made as much an expected part of any assignment as instructions concerning the location and scope of the job or special tools required. . . . and without the frequent use of the word *safety*.

Any competent workman is interested in doing a good job. He welcomes any interest and assistance from his supervisor in helping him achieve the best results from his efforts, because he knows good results will benefit him when an opportunity for promotion comes along.

Among those results is a record of completing his jobs without danger, injury, or damage to himself or fellow employees.

Save that all-important word *safety* for occasions when other words don't convey the same or better meanings so familiarity won't breed contempt.

Fire Tips for The Safety Man

By MARSHALL E. PETERSEN

Marshall E. Petersen is the consultant fire protection engineer for the National Safety Council's Industrial Department. He has a B.S. degree in safety and fire protection engineering from Illinois Institute of Technology. Petersen is a member of the American Society of Safety Engineers and the Greater Chicago Safety Council. Before joining the NSC staff, he was supervisor of safety and fire protection, Allied Chemical Corp.; industrial hygienist, Illinois Department of Labor; and safety engineer, Argonne National Laboratory.

NFPA Publishes New, Revised Standards

Important revisions have been incorporated into the National Fire Protection Association's standard *Portable Fire Extinguishers* (NFPA No. 10), which deals with the installation and maintenance features of portable fire extinguishers.

Among the important changes in the 1961 edition is the addition of a section covering the newly-developed multipurpose dry chemical extinguishers for use on Class A, B, and C fires. Complete revisions were made of Section 2, "classification of fires and rating of portable fire extinguishers," and Section 3, "distribution of portable fire extinguishers." Other important additions include items on new requirements for hydrostatic testing of extinguishers and special precautions for handling multipurpose agents.

Revisions have also been made in the standard *Sprinkler Systems* (NFPA No. 13), which covers the installation of sprinkler systems. Probably the most important are the provisions for extended spacing of sprinklers in ordinary hazard occupancies, regardless of the type of construction. Similar extended spacing is also allowed in some light and extra hazard occupancies.

This standard is extremely important since it is almost universally used as the authoritative guide to proper sprinkler practices.

A completely new standard, *Fire-Retardant Treatments of Building Materials* (NFPA No. 703), has just been issued by the NFPA. This is the first standard on methods of reducing flame-spread properties of building materials, and it deals with both pressure impregnation and the use of surface coatings such as fire-retardant paints.

Copies of this new standard, and the revised standards, can be obtained from the NFPA, 60 Batterymarch St., Boston 10, Mass.

Announce 1961 Fire Prevention Contest

More than 1,800 cities, industrial firms, military units, and government divisions are expected to participate in the National Fire Protection Association's 1961 Fire Prevention Contest.

This contest, an international competition to provide recognition for excellence in the field of fire safety education and performance, is in its 34th year. Entries last year exceeded all previous totals, and a large enrollment is anticipated for this year.

The only prerequisite for entry is participation in a fire prevention program.

Entry forms, returnable by November 30, are available from the NFPA offices at 60 Batterymarch St., Boston 10, Mass. There are separate forms for municipal, industrial, government, and military entries.

Winterize Water Extinguishers Now

Now is an excellent time to service pump tanks and pressurized water fire extinguishers and check them for protection against freezing.

For many years, calcium chloride solution has been recognized as an ideal fire protection medium where plain water is used as an extinguishing agent. Calcium chloride is well suited to provide year-round protection against freezing temperatures in winter, and rapid evaporation during hot, dry periods.

Calcium chloride is white, odorless, water soluble, and nontoxic. It is available in regular flake (type 1, 77 per cent minimum) or in concentrated flake, pellet, or other granulated form (type 2, 94 per cent minimum). The properties that make it useful in plain water type fire extinguishers are:

1. Anti-freeze: A solution of calcium chloride can be made to withstand temperatures as low as minus 59 F.

2. Resists evaporation: Due to its hygroscopic property a calcium chloride solution will not evaporate to dryness.

3. Prevents stagnation: Calcium chloride solutions will not foul. Plain water will become stagnant and provide a breeding place for mosquitoes.

The National Board of Fire Underwriters approves the use of calcium chloride for fire barrels and fire pails, and special preparations of calcium chloride for pump tanks and cartridge-operated and stored-pressure extinguishers. Protection against freezing is necessary when these extinguishers are exposed to temperatures below 40 F. It should never be used in soda-acid or foam type extinguishers.

Solution Preparation

Calcium chloride comes ready for use in 25, 80, and 100 lb. moisture-proof bags and in bulk. It is readily soluble in either hot or cold water, and should be added to the water when making a solution.

If the capacity of the container

is unknown, or only partial filling is desired, a known volume of water should be used. The total quantity of calcium chloride required to produce a solution of any desired freezing point is determined as follows: Multiply the number of gallons of water in the container by the number of pounds of calcium chloride per gallon of water corresponding to the desired freezing point. (See chart.)

When the capacity of the container is known, and the container is to be completely filled with solution, the total quantity of calcium chloride required to produce a solution of any desired freezing point is determined as follows: Multiply the container volume (in gallons) by the number of pounds of calcium chloride per gallon of solution corresponding to the desired freezing point.

A convenient method of making the solution is to fill the container about ¾ full of water, then slowly add the predetermined quantity of calcium chloride while stirring the mixture with a paddle or mechanical agitator. After dissolving, add sufficient water to fill the container and again stir until the solution is uniform.

It is good practice to provide solutions of sufficient concentration to withstand freezing 10 to 15 degrees below the lowest temperature anticipated. But *do not exceed* ratio of calcium chloride to water as shown in table below.

The addition of calcium chloride to water will increase the original volume. For example, if five pounds of regular flake calcium chloride is dissolved in a gallon of water, the final volume of solution will be 5 qts.

Calcium chloride should always be added to the water; never pour the water on top of the calcium chloride, for it may only partially dissolve it, and produce a hard crytalline coating or mass that will be difficult to dissolve.

When calcium chloride is dissolved in water considerable heat is developed. Therefore, calcium chloride solutions for use in galvanized containers should be prepared in a separate tank and allowed to cool before being placed in the containers.

Maintenance

Regardless of the type of appliances provided for first-aid fire protection, the equipment in use should be examined at regular intervals – several times a year – to make sure it has not been tampered with or moved.

Storage

Calcium chloride should be stored, if possible, on the ground floor of a building, preferably on wood supports to prevent contact of the bags with floor moisture. It is not advisable to store it in attics or other rooms. Accidental breakage and subsequent absorption of moisture may result in solution seepage into wood floors and plastered ceilings. In case there is drippage from the bag to a concrete floor, it can be removed readily by mopping up with clear water.

To prevent the chemical from becoming wet and caked, partially used bags should be kept tightly rolled down to the unused portion.

HOW TO PREPARE FIRE PROTECTION SOLUTIONS*

Pounds of Calcium Chloride Required				Required Freezing Point, Degrees F	Specific Gravity
Type 1 (77 Per Cent Min.)		Type 2 (94 Per Cent Min.)			
Per Gal. Water	Per Gal. Solution	Water Per Gal.	Per Gal. Solution		
1.0	1.0	0.8	0.7	24	1.07
1.5	1.4	1.1	1.1	19	1.10
2.0	1.8	1.6	1.5	13	1.14
2.5	2.2	2.0	1.9	6	1.17
3.0	2.6	2.3	2.1	— 2	1.19
3.5	3.0	2.7	2.5	—12	1.22
4.0	3.4	2.9	2.7	—22	1.24
4.5	3.7	3.2	3.0	—33	1.26
5.0	4.0	3.7	3.4	—55	1.29

*Calcium Chloride Institute, 909 Ring Bldg., Washington 6, D.C.

OCTOBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Fire Prevention Week Oct. 8-14, 1961

A complete line of program materials for Fire Prevention Week is now available from the National Fire Protection Association.

The year's theme is "Don't Give Fire a Place to Start," emphasized with a dramatic poster depicting an actual fire scene. Additional materials, available for promoting a fire safety program, include:

Poster – Don't Give Fire a Place to Start
Streamer – Stop Fires Before They Start
Facts About Fire – two pages of facts and pictures
Blotter, Stamp – Fire Prevention Week, October 8-14
Coloring Sheet – Sparky's fire prevention message for children
Flyer – Story of Fire Prevention Week and the Chicago fire
Phone Sticker – press-on sticker for emergency numbers
Slogan Sticker – press-on stickers for shop, office reminder
Inspection Blanks – Home Check List, School Check List, Sparky's Home Inspection Blank
Sparky Comic and Coloring Books for children
Folders – for mailings, home and employee distributions, etc.

Electricity

—Good and Faithful Servant

When it is treated right, that is. Used the wrong way, it becomes an unforgiving and merciless master

By CHARLES F. DALZIEL

THE RELIABILITY of modern electric appliances and machines may be lulling industry and the public into a false sense of security from shock hazards. Such a situation needs correction.

All electric equipment, regardless of how well designed and manufactured, is subject to the effects of wear, age, and abuse. All electric equipment will eventually wear out, fail, or stop. In the process it may constitute a shock or fire hazard.

Because of the tremendous use and ever-increasing development of new electric appliances for the home, the farm, and industry, it is essential that the general public, especially the youth of the nation, be taught how to avoid electric shock and fire hazards and how to use electrical equipment safely. The importance of widespread dissemination of such information is obvious when it is realized that, in addition to the thousands of industrial applications, there are at least 328 different applications of electricity on the farm and 187 in the homes of this country. Although the quantitative aspects of electric shock are of a technical nature it is fortunate that the practical aspects of electrical safety are so simple that even a child can learn to protect himself from many potential hazards.

Because of the havoc of lightning, and, on the other hand, the harmlessness of a shock from static sparks experienced with modern synthetic clothing materials, all persons are familiar, at least to some degree, with electric shock and its tremendous potential. Normally, we achieve safety from electric shock by isolation, insulation, current limitation, and grounding. It is only when one or more of these safety measures fail that there is an electric shock hazard. Even when home appliances or other low voltage machines become defective, the electric shock hazard can be mitigated by keeping the body from becoming a part of the circuit. Fortunately, healthy, dry skin provides a high degree of protection from the voltage used in American homes.

Water provides a most dangerous condition for receiving electric shock, and no person should use an electric lawn mower or hedge clipper when barefoot, or use electric portable tools with his feet dangling in water, say from a boat or wharf. In contrast, dry shoes, rubber overshoes, dry gloves, old sacks and newspapers, and ordinary floors when dry, provide protection from house circuits and defective appliances even during wet conditions.

It is important to remember that the slightest shock is an ominous warning of potentially hazardous conditions. The slightest shock when operating any electrical machine even in a dry location, can result in instant death if part of the body is in electrical contact with the earth or grounded objects.

Many shocks and electric burns would not happen if the operator of an electrically driven tool or appliance followed a few simple rules when using the device. The following are offered as practical aids to electrical safety.

1. Examine the equipment for possible physical defects. Many potential-

*The author is professor of electrical engineering, University of California, Berkeley.

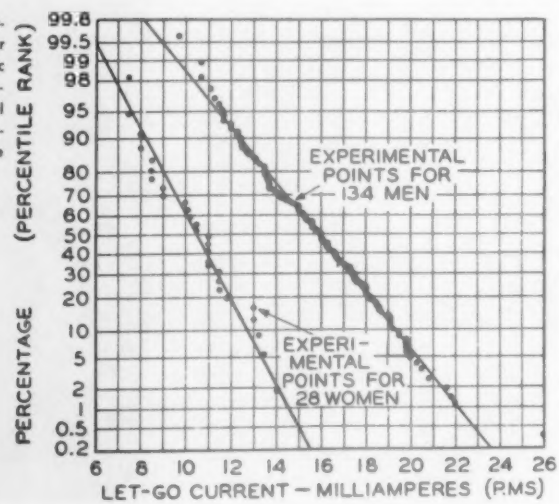

Fig. 1. 60-cycle let-go current distribution curves for men and women. Electric currents of a specified degree of safety for normal men or women may be obtained directly from the curves.

ly dangerous defects, such as damaged plugs, extension cords, or receptacles are obvious even to an untrained observer.

2. Operate the device on a dry floor away from grounded objects. Get the feel of the on-off switch, and be sure the apparatus operates properly.

3. Move the portable near a grounded object. With the switch first off, and then with the switch on, watch for sparks as the frame is moved to make touching contact with the grounded object.

4. Hold the operating portable and gently touch the *back* of the same hand or the *back* of the middle finger to the grounded object.

5. If the device is equipped with two-prong attachment plug, reverse the plug and repeat (3) and (4) above.

6. If you have any doubt regarding the safe condition or proper operation of any electrical machine, discuss the matter with your supervisor, your neighborhood electrician, or power utility service man.

At this point it may be instructive to discuss briefly the four methods of achieving electrical safety. When a person is conscious of the underlying reasons for safety procedures, he is in a much better position to notice conditions that might lead to trouble, and to correct them. The information may be of valuable assistance in explaining the matter to others. For example:

1. Achieving safety by isolation means that we place high voltage wires overhead high above reach, or we place dangerous equipment behind guards or inside cabinets. This means is frequently nullified by the booms of overhead cranes contacting the wires, by flying kites held with wire instead of string, by persons climbing power poles to rescue pets, or by operating electrical equipment with the guards removed or safety doors circumvented.

2. Insulation is universally used to provide safety from low and intermediate voltages. However, all insulations can be ruined by excessive temperature, which is commonly due to overloading the equipment (often caused by using a 30-ampere fuse in a 15-ampere circuit); by mechanical damage which may be caused by abuse, neglect, or carelessness; or by water. When they get old some insulations become frayed or brittle and some crack, thereby exposing the copper conductor. After enough continual flexing, most insulations tend to break or crack. Such defects

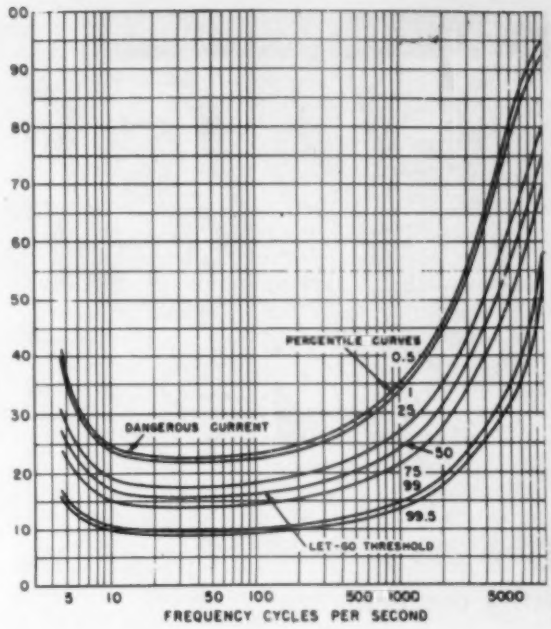

Fig. 2. Effect of frequency on let-go current for men. Values for women are about 66 per cent of those for men. Current values (shown above in milliamperes) become dangerous progressively to an increasing number of persons as indicated by percentiles on right hand side of curves.

are often visible and the observing homeowner is usually well aware of the situation before a hazardous condition develops.

3. The principle of current limitation means that safety is assured by purposely limiting the shock intensity from a device to a value known to be reasonably safe. This means is used in home radios and TV sets, and in farm devices such as the electric fly panel, electric insect trap, and electric fence.

4. Grounding achieves safety by providing a low resistance path between the appliance frame and the neutral of the supply system which is grounded. This means provides two distinct safety measures. First, providing a low resistance path from the normally non-current-carrying parts of the device to the electric power source assures that any electrical failure that results in energizing the frame and hence the handle or metal parts grasped by the hand, results in instantly opening the circuit over current protective devices such as the fuses or circuit breaker.

— To page 76

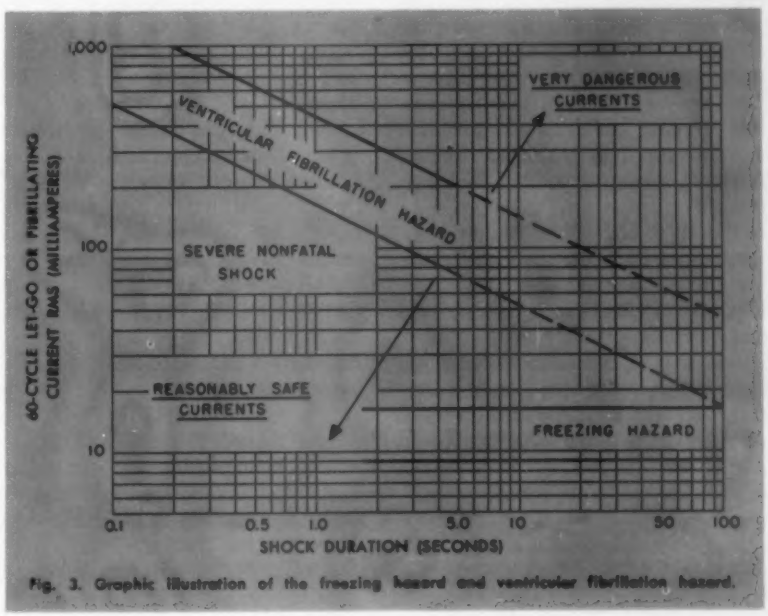

Fig. 3. Graphic illustration of the freezing hazard and ventricular fibrillation hazard.

The same fire fighters who extinguish a blaze may be spreading radioactive contamination throughout an area. Fortunately, there are ways to avoid this costly paradox

Blaze Battlers Can Spread Radioactivity

By FRANCIS L. BRANNIGAN and GEORGE S. MILES

WHEN radioactive materials are spread around in such an amount as to present a hazard to people who may use the area, there is really only one remedy: gather up the material and remove it from the scene. Remember, *radiation cannot be neutralized.*

Removal of radioactive contamination can be costly. In some cases, the cost of removal may be so high it is less expensive to junk the contaminated material.

The degree of hazard depends on the nature of the radioactive material, the type of radiation, and the quantity of material present. If the radioactive material is a gamma emitter, a high radiation level may be set up in the area. If it is an alpha or beta emitter, the radiation hazard directly from the material may be less serious, but the hazard remains that the material may be air-borne and breathed in by persons using the area.

A vital duty of the fire department is to prevent contamination of the fire department's own equipment and the spread of contamination throughout the fire building and to adjoining areas.

It is impossible to prevent contamination of equipment which enters the fire area. This may necessarily become contaminated in accomplishing the job.

The return of that equipment in a normal manner to the apparatus may spread contamination to apparatus, to other equipment on the apparatus, from the apparatus to the fire station, from the fire station to personnel, and from personnel to their homes. In the spread of radioactive contamination, we finally reach the point where the spread is so thin the contamination cannot be appreciably measured. We reach this safe point by dilution. This is one recognized manner of disposing of a contamination problem.

As long as the contamination is measurable, no matter how slight the real hazard, we can have a serious public relations problem, since the general public is not well enough informed to distinguish degrees of radiation hazard levels.

The spread of contamination may reduce the hazard but increase our problems with our own personnel, their families, and the public.

In fire-fighting operations personnel normally move from the apparatus to the scene of the fire, from the scene of the fire to the areas above and below the fire as dictated by the necessity of the fire situation and the orders of the officer-in-charge.

If the fire involves radioactive contamination, it is probable the move-

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The authors are nuclear safety specialists of the U. S. AEC. This material has been adapted from *Living with Radiation, Part 2—Fire Service Problems,* which is available in booklet form.

ment of personnel may spread the contamination from the scene of the fire to the floor above by moving from one place to another.

It is vital to contamination control that personnel entering the contaminated area do not move to other areas of the fire or leave the contamination control area until they have been decontaminated. The same principle applies to equipment.

This requires a totally new approach to our fire fighting problem. We divide the available fire forces into contaminated and uncontaminated firemen.

The area to which contamination is to be confined may be a single room, a wing of the building, a single floor, or the entire building, depending on the circumstances. But whatever the area is, all personnel entering it should remain in the area until they have been decontaminated.

If additional equipment is provided, word is passed on what is needed. Uncontaminated personnel bring equipment to the contamination boundary line and pass it over.

This is not as complex a problem as it sounds. In a plant where the spread of contamination is a real factor, you will find many means are taken to control it.

Possible areas of contamination are often marked off on floors and in corridors. Personnel who work in the areas of radioactive contamination often wear distinctive work clothes, such as laboratory coats with red collars.

This clothing may be readily recognized if the individual violates the rule and goes outside the contaminated area.

As part of prefire planning, the contamination control point should be determined ahead of time and, if possible, preassignment of functions in or outside the contaminated area made to companies.

It is hard for personnel without experience with a contamination incident to realize how readily radioactive contamination can be spread around and how difficult to clean up.

Past participants in training problems conducted during seminars by the Safety and Fire Protection Branch of the Atomic Energy Commission may remember how a few drops (two millicuries) of bromine 82 dissolved in six ounces of sugar syrup can be detected with Geiger counters all over the fire school, on contaminated equipment, on the feet and clothing of personnel.

If you are presenting this subject to class without the aid of a radioactive contaminant, ask them to imagine that you spill five pounds of granulated sugar on the floor, that people walk in it and track it around. Then ask whether the class considers it possible to get back the five pounds of sugar for you.

Airflow

In one typical airflow situation in a plant or laboratory using radioactive materials, clean air enters the plant from outside.

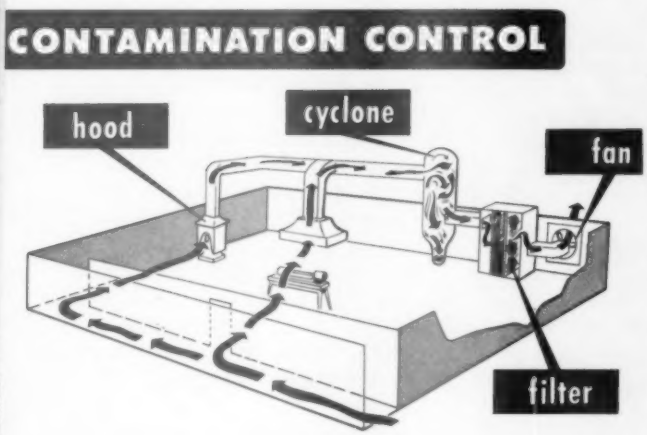
In some cases, it must be prefiltered because air available from outside the plant contains dust or other material making it unsuitable for use in the plant. Clean air then passes into various rooms or areas where the work is done.

Before air can be passed outside the plant, it is necessary that the radioactive contaminants be trapped. In some cases, this is necessary not only from the point of view of health, but because of the high dollar or strategic value of materials concerned.

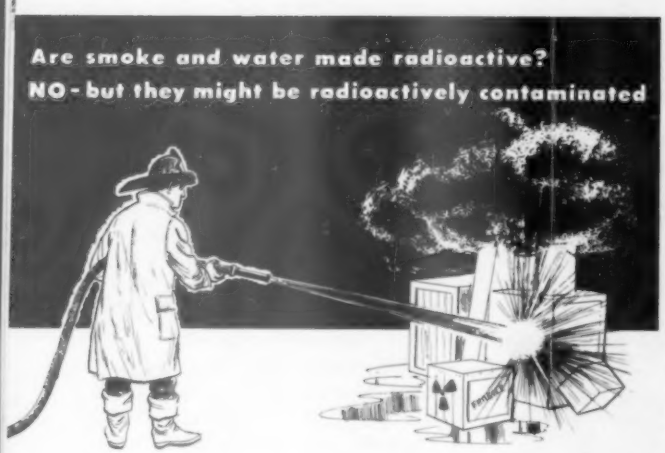
There are different types of air-cleaning devices available and used. We are familiar with the cyclone, a simple type of air cleaner. Many are installed in woodworking plants to trap sawdust. The air is whirled around in the cyclone, and heavy particles fall to the bottom.

Electrostatic precipitators often are used to pull particles out of the air by the principle of attraction of opposite electrical charges. Banks of filters also are used to trap the finest material, so air passing out of the plant is suitable for discharge to the atmosphere.

In many cases, the air is discharged out of a tall stack or chimney so natural dilution of the atmos-



Airflow arrangements will vary from plant to plant, but the sketch at left shows a typical one. Fresh air enters the plant through corridor and doors. Air is drawn into vents over a chemistry bench and lathe. Contaminated air is carried to main duct and drawn into a cyclone air cleaner to separate out heavy particles. Banks of filters remove fine materials, so that the air passing out of the plant through the exhaust fan is suitable for outside discharge.



Smoke and water are the principal means of spreading contamination when fire strikes premises using radioactive materials. To prevent spread of contamination, the airflow system should be kept operating unless the system itself is affected by fire. In the latter case, fire resistant filters will retard contaminant spread. To prevent spread of contaminants by water, firemen should use as little as possible, and confine it to the immediate area.

phere will assist in dispersing material so it no longer represents a hazard.

Considering the fire problems of such a situation, there are certain points to keep in mind.

First, when such a system is in operation, the entire plant or laboratory is under a negative atmospheric pressure; a slight vacuum is set up in the plant to keep the air moving in the proper direction.

If the fan is suddenly shut off, this negative pressure or vacuum could cause the material in the air-cleaning system to be sucked back into the room, possibly contaminating the area.

If the airflow system is kept operating, radioactive smoke from the fire will be drawn through the air-cleaning system. Smoke being discharged out the stack has been cleaned of contaminants, and the possibility is minimized of contaminating the surrounding area.

This discussion points up need for studying the air-cleaning system of the plant using radioactive materials with prefire planning to determine whether the system should be shut down immediately in event of fire.

There is no single answer to the question. In general, if the fire is relatively small and the operation of the air cleaning system doesn't accelerate the progress of the fire, it is better to keep the system operating. Ventilation is then being carried on by the best possible means, and smoke is being removed from the building through the best possible route.

If the fire involves material in the air-cleaning system, and particularly if it has spread to the filters, it is generally advisable to shut down the air flow to retard spread of the fire, since the failure of the air-cleaning system may lead to contamination of surrounding areas.

If there is an operating choice between contaminating the general neighborhood and contaminating the plant handling the radioactive materials where the fire originated, it is obvious that every effort should be made to confine the contamination to the plant handling the materials.

Many filters used for removal of radioactive contaminants from the air are made of filter paper which, once ignited, consumes the filter.

Recent research encouraged by the

Techniques for radiation monitoring after fire: left — hand-and-foot counter; right — man using portable monitor to check clothing.

Safety and Fire Protection Branch of the Atomic Energy Commission has led to development of fire-resistant filters. These are made of glass fibers, won't burn and won't be the means of releasing radiation contaminant to the atmosphere by the burning of the filter.

The cost of such filters is comparable with previously standard paper filters. There appears to be no reason why fire-resistant filters cannot be substituted entirely for paper filters where the high efficiency filtration of radioactive particulate matter is desired.

Substitution of such filters for paper filters will contribute markedly to reduction of the contamination problem when fires occur on premises using radioactive materials.

Tripod holds three types of instruments used for making laboratory measurements of air-borne particulate contamination.

In addition to smoke, the other most readily available means of the spread of contamination at a fire is by water used to extinguish the fire. Here the basic principle of contamination control applies: confine contamination as closely as possible to the point of origin.

If this is not practical, we should get the contamination to its final destination as rapidly as possible, minimizing chances along the way of contamination dropping out of the water.

If the fire is small, the least quantity of water should be used to extinguish it. This water should, if possible, be confined in the area where radioactive materials are handled and where contamination might normally be expected.

Sawdust, salvage covers, and standard fire department salvage techniques should be used to keep water containing radioactive contamination as close as possible to the scene of the fire.

If the fire is of larger size than can be handled by the few gallons of water confined at the scene of the fire by the use of sawdust, consider what happens to runoff water.

This may contain radioactive materials. The water will be contaminated. Radioactive materials will drop out of the water along the way, in accordance with the physical laws that govern the dropout of materials from water.

There is nothing about this problem specifically related to radiation, but as the water spreads, radioactive materials will drop out and contamination may be widespread.

In a downtown area of a city where all of the streets are paved, assume that all water used on a fire will eventually find its way to the sewerage system. If the fire is on the upper story of a building and water is allowed to flow freely, the water will flow down the stairways into the street and along the street to a sewage catch-basin, and from there into the sewerage system.

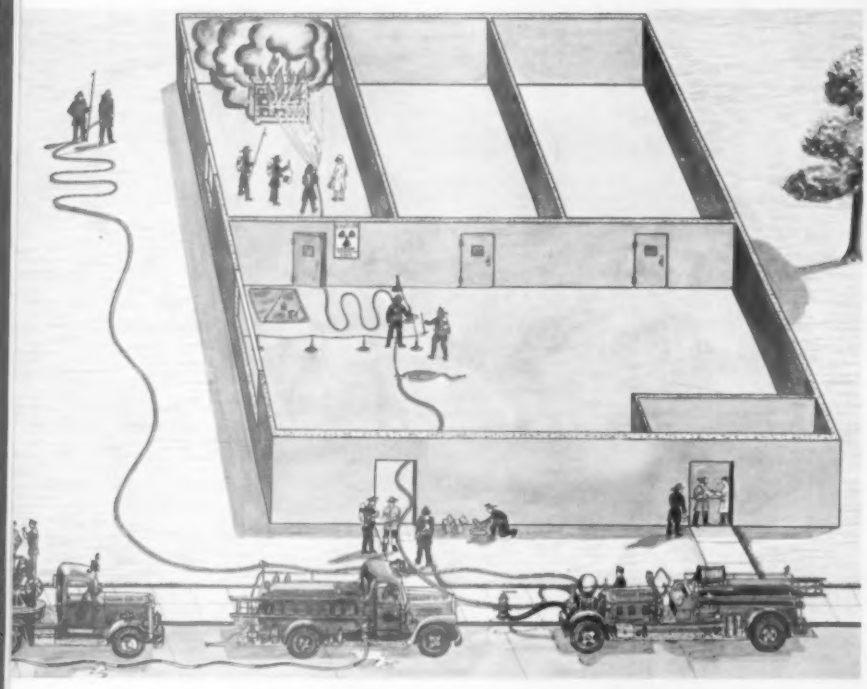
All along the way, a trail of contamination will be left. Since the water *must* enter the sewerage system, it would be best to get it into the sewerage system as soon as possible.

Apply standard salvage techniques to keep the water from flowing down and through the building. Floor drains should be used, or if not avail-

Pile of fire clothing discarded by Philadelphia Fire Department after a tragic chemical plant explosion in which 10 firemen were killed. When clothing becomes radioactively contaminated, special disposal methods must be used to prevent its spread.

This building, heavily contaminated after a fire by short half-life radioactivity, is sealed and labeled to prevent accidental entry.

Cutaway view shows methods suggested to confine radiation to the smallest possible area. Note self-contained breathing apparatus.



able, should be improvised by removal of toilets. Contaminated water should be broomed or squeegeed down through these openings to minimize the amount of water flowing through the building and dropping out contamination as it goes.

Sewers

What then is the ultimate disposition of the radioactive material?

If contamination is washed into a storm drain, it will follow the usual course to a river or lake or the ocean and be diluted by the volume of water in the river, lake or ocean.

If the contaminant goes to a sanitary sewerage system which passes through a sewage treatment plant, there is the possibility the contaminant might be concentrated in the sludge produced by the treatment plant. It might be necessary to check on the sludge and place restrictions on its future use.

In the building, and the sewerage system generally, bends, traps, and other locations where radioactive material might fall out could require survey to avoid hazard to plumbers or sewer workers performing maintenance work in the future.

Highways

In an accident or fire on a highway, it is possible the highway in the immediate area of the accident will be contaminated with radioactive material.

To permit vehicles to pass indiscriminately through the contamination on the highway would spread contamination up and down the highway and also to vehicles involved. This should be avoided by closing the highway to traffic until contamination can be cleaned up.

One practical method of dealing with the problem is to hose the contamination from the highway to the shoulders of the road. This would make it possible to open the highway to traffic, leaving radiation contamination on the shoulders until it could be cleaned up from that location.

Wetting down of contamination would also tend to keep it from being air-borne. By practical experience, it has been found that water streams including a wetting agent are even more efficient than ordinary water in removing contamination from the surface of a highway.

Decontamination of the fire building would be no part of the fire department's responsibility. It is the fire department's responsibility, first, to extinguish the fire and, secondarily, to scatter contamination no farther than necessary.

Confine contamination as closely as possible to the point of origin, without allowing equipment or personnel to spread contamination to other areas.

Inevitably, equipment and apparatus will become contaminated. Find what sort of decontamination problem is encountered and to what lev-

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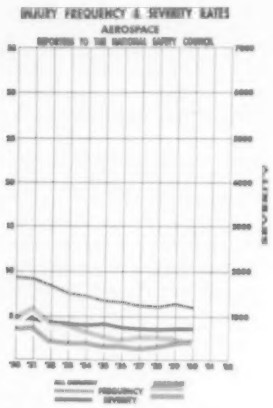
Sections Compare 10-Year Injury Rates

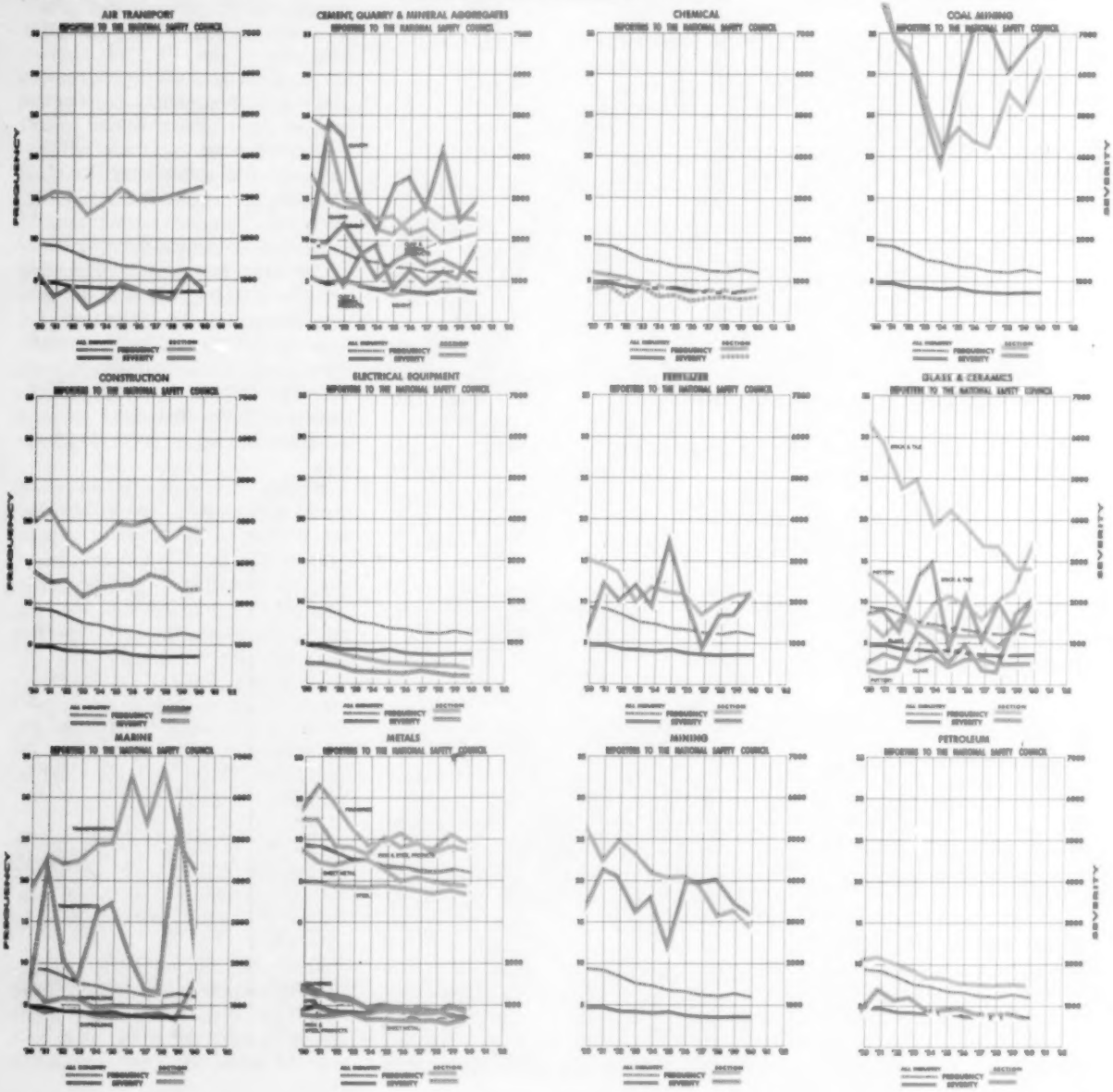
These charts show 1950 through 1960 frequency and severity rates for 21 of the 27 National Safety Council Industrial Sections.

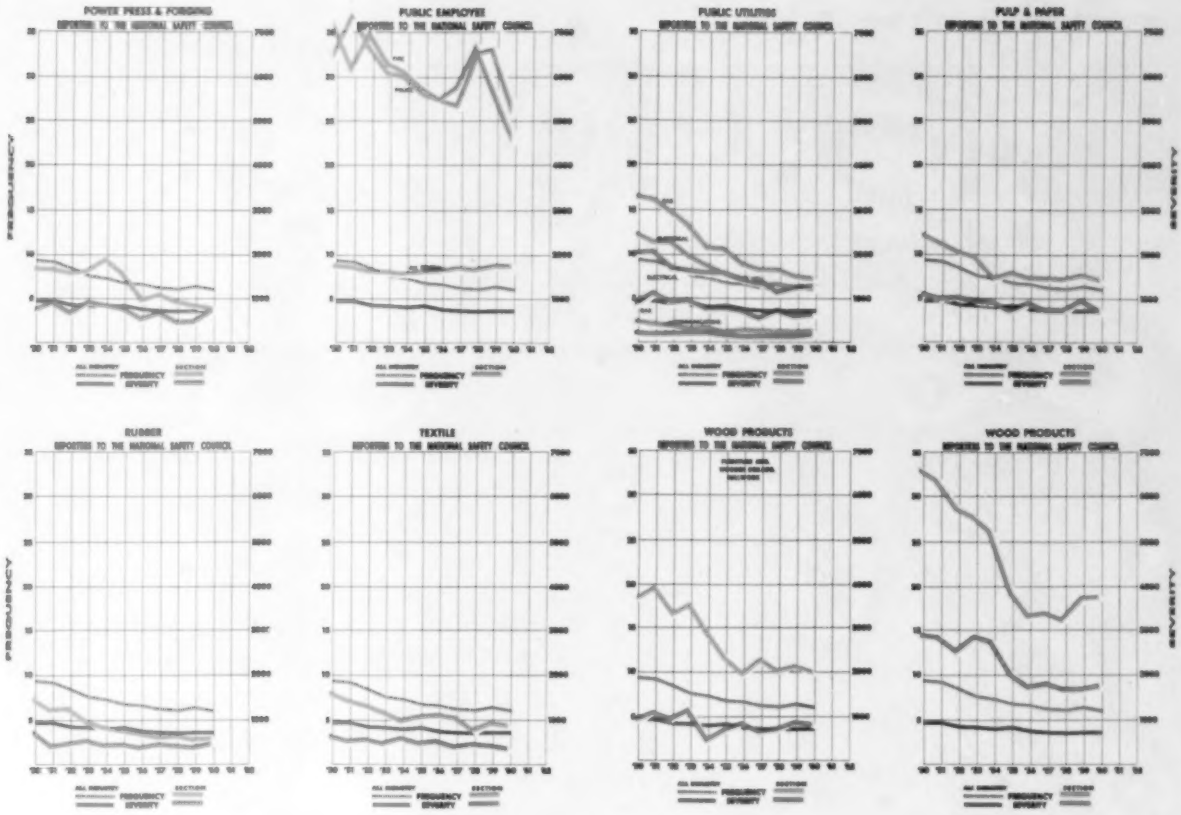
All-industry rates for the same period are on each chart for comparison. The 1960 all-industry rates are based on summaries of injury experience submitted by 11,294 reporting units.

All-industry frequency and severity rates rose slightly during 1960. The general downward trend of both rate categories during the past decade are seen in the individual rates for each section.

Frequency is expressed in disabling injuries per million man-hours worked, severity in hours lost per million man-hours worked.







Latin Industrial Team Probes U.S. Safety

Eight Mexican safety men recently completed a five-week tour of U.S. governmental agencies, industries, educational institutions, and safety organizations. Their mission: to prepare a report on safety techniques used in this nation for distribution among industrial organizations and institutions in Mexico, and to promote use of practical safety methods there.

This safety team, organized through the Mexican Productivity Center, made its eight-state tour under the sponsorship of the U.S. International Cooperation Administration.

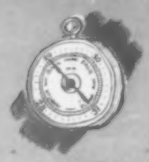
In Chicago the experts toured the National Safety Council and received briefing on its industrial safety activities.

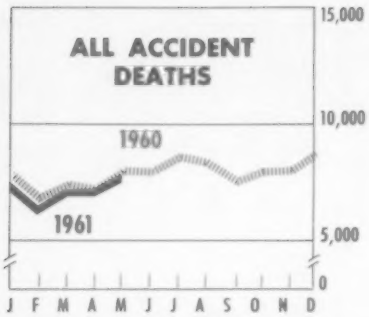
The eight also visited local safety councils, manufacturing firms with established safety programs, safety equipment manufacturers, insurance companies, governmental and national labor organizations, and educational institutions where industrial safety is part of the program.

Roy Benson, manager of the National Safety Council Industrial Department, briefs members of the Mexican industrial safety team on the Council's accident prevention techniques. Clockwise from foreground are: Jose Manual Chavez, Hermenegildo J. Aldana, Alejandro Olivera, Fernando Merino, Carlos Alejo Trejo, Luis Ramon, and Eduardo Keys. Seated background are Victor Kovanich Jr., (l) International Cooperation Administration, who served as project escort, and Charles Wolff, of the NSC Industrial Department.

THE ACCIDENT BAROMETER

Prepared by the Statistics Division
National Safety Council





THE NATIONAL ACCIDENT FATALITY TOLL

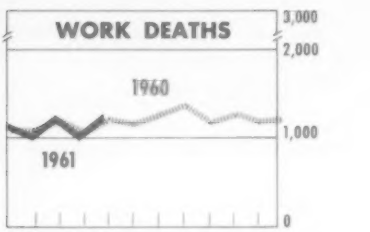
	May			Five Months		
	1961	1960	Change	1961	1960	Change
Total	7,700	7,900	— 3%	35,200	36,700	— 4%
Motor-Vehicle	3,160	3,330	— 5%	13,940	13,960	— 0%
Public (except M.V.)	1,600	1,680	— 5%	5,600	5,850	— 4%
Home	2,000	2,150	— 7%	11,400	12,500	— 9%
Work	1,200	1,200	0%	5,400	5,500	— 2%

WORK INJURIES

21 NATIONAL SAFETY COUNCIL CONTESTS

Disabling Injury Frequency Rates

	1961	1960	Change
May	6.51	5.87	+11%
Five Months	6.28	6.08	+ 3%

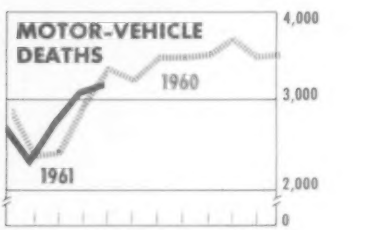


MOTOR VEHICLE DEATHS

FIVE MONTHS 1961

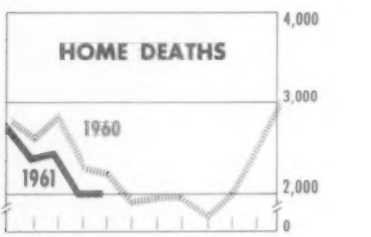
CHANGES IN DEATHS

Number of Reporting States		Number of Reporting Cities Over 10,000 Pop.
22	UP from 1960	237
0	SAME as 1960	274
27	DOWN from 1960	250



GREATEST PER CENT REDUCTION IN DEATHS

States		Cities Over 200,000 Pop.	
Alaska	—42%	Charlotte, N.C.	—69%
Vermont	—39%	Richmond, Va.	—69%
Delaware	—33%	Washington, D.C.	—60%



HOME AND PUBLIC DEATHS

FIVE MONTHS 1961

HOME DEATHS

UP from 1960:
Poisonings

DOWN from 1960:
Poison gas
Suffocation
Firearms
Falls
Fires, burns

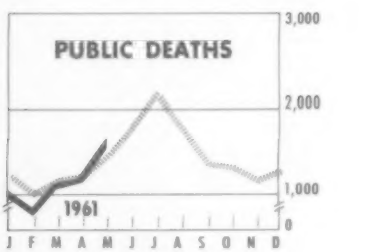
AGE GROUPS
Change from 1960

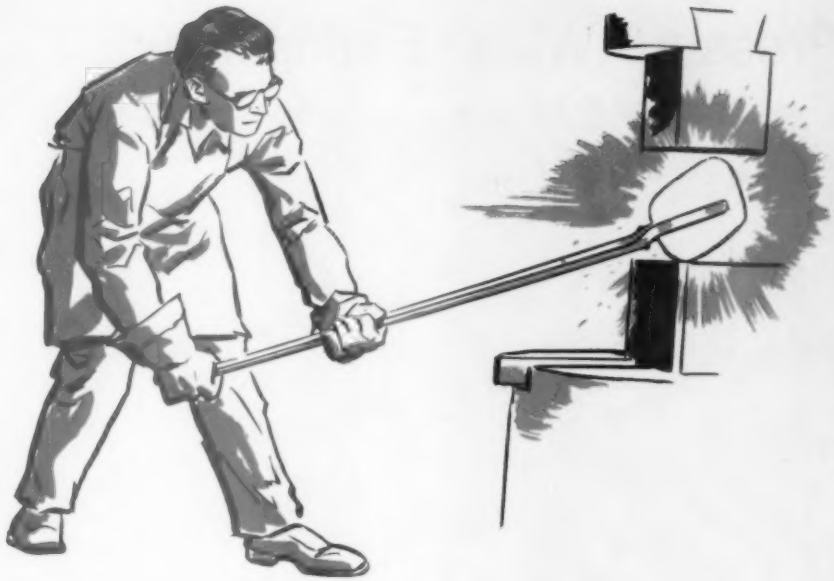
Home		Public
Down	0- 4	Up
Down	5-14	Down
Down	15-24	Down
Down	25-44	Down
Down	45-64	Down
Down	65-74	Down
Down	75 & Over	Down

PUBLIC DEATHS

UP from 1960:
Drownings
Firearms
Falls

DOWN from 1960:
Transportation
Fire, burns





Press, Forging Mishaps Each Teach Lesson

Unguarded Pedal

A drop-hammer operator received severe contusions and abrasions to his right leg when he tripped over the *exposed foot pedal.* The released head struck a part which was not yet properly in the die, causing the part to strike the operator's leg. A plate was put on the pedal to prevent accidental tripping in the future.

Experience No Teacher

One of a team of upsetter operators – the furnace man – returned from lunch early one day and decided to turn on all the power and cooling lines of the upsetter, to be fully prepared to start operating when the machine operator came back.

When the operator returned, he decided before starting normal operation to polish the die with an air grinder equipped with a small polishing wheel.

Rather than lock out the power on the convenient starter box and block the foot pedal, he felt he could do a quick polishing job without exposing himself to danger.

While performing the polishing operation, he accidentally stepped on the foot pedal, cycling the machine. His right index finger was caught between the dies and severed.

The injured man had about 26 years' experience on upsetter operations.

Dual Controls Too Late

Prior to releasing a molding machine for regular production, a set-up man with nine years' experience was positioning the core box. He placed the box on the machine table and pulled the *single air control lever* which actuates the air cylinder and moves the box into position beneath the sand magazine. When the air cylinder did not operate, he thought it was stuck.

Without shutting off the air to the cylinder, he walked behind the machine and oiled the cylinder shaft. Returning to the operating position, he grasped the core box with his right hand. As he did so, the cylinder suddenly "freed up," and the core box moved forward. One of the side clamps, coming into position as the box moved forward, amputated his right little finger as it closed on the box.

The machine has been rewired to provide dual operating controls.

Normal Procedure Dangerous

To shape a solid piece of round, high-speed steel for machining, the metal was heated to 2,000 F and placed on the anvil of an electric forging hammer.

The piece was struck lightly several times with the ram to start the breaking-down process. As a normal occurrence, the forging became deformed on one side. To correct this, the operator, holding the piece with tongs, tilts it to deliver several more light blows to correct the deformity. In this instance, after several such blows, both hot forging and tongs shot from under the ram, striking the employee a glancing blow on the face and knocking him down.

Since such operations are difficult to guard, hammer smiths are recommended to follow instructions and signals from the hammer driver. These specialists can see *that the piece is held in the center of the anvil and that light blows are used.*

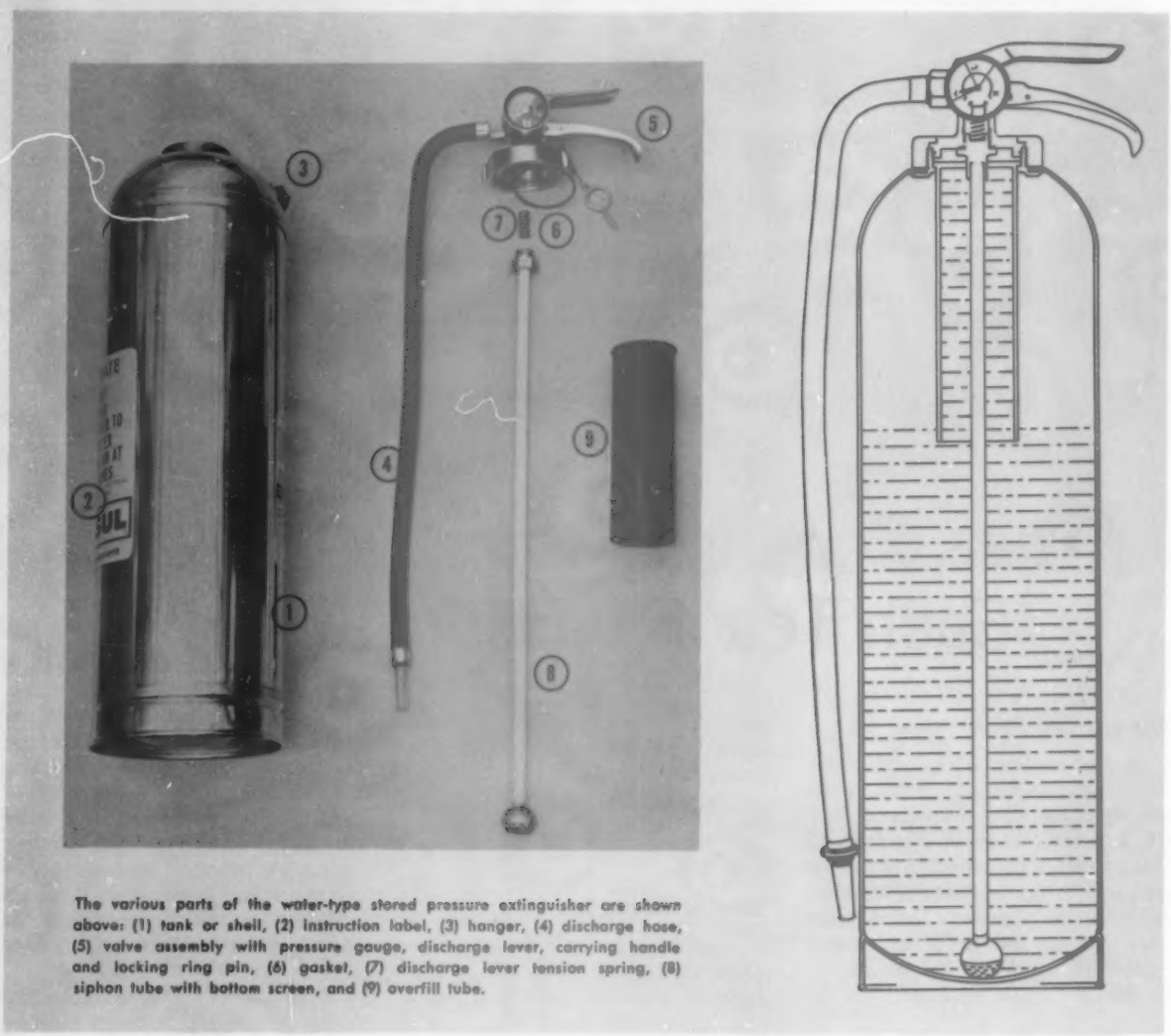
Lockout Provision Ignored

Called to repair a water leak on the body core of a die, a die cast job setter positioned himself on the operating platform to observe the leaking water line. He then switched the machine from "automatic" to "set-up" and inched the large body core into the closed position. *Neither he nor the machine operator locked out the master switch,* even though a padlock for this purpose was attached to the main controls on each side.

The man then climbed onto the hydraulic line to get a better working position. *He failed to shut off the hydraulic valve that also controls the body core.* With the body core in the forward position – in the die cavity – he proceeded to repair the leak. At one point he asked the machine operator to go around the machine to get him a hammer.

The operator found the hammer and, while bringing it back, accidentally hit the machine's emergency-stop button. The hydraulic spring-loaded solenoids opened, stopping the hydraulic pumps. With the pressure off, the body core returned to its open position. The job setter's hand was caught in the shear point between the moving core and the stationary protective metal shroud, resulting in amputation of his left hand at the wrist.

The Stored Pressure Water Extinguisher



The various parts of the water-type stored pressure extinguisher are shown above: (1) tank or shell, (2) instruction label, (3) hanger, (4) discharge hose, (5) valve assembly with pressure gauge, discharge lever, carrying handle and locking ring pin, (6) gasket, (7) discharge lever tension spring, (8) siphon tube with bottom screen, and (9) overfill tube.

The stored pressure water extinguisher is available in a 2½ gal. size, which weighs about 40 lbs. fully charged, and has an effective range of approximately 35 to 40 ft. horizontally. The extinguisher can be intermittently operated and has a discharge time of about one minute under continuous operation.

Stored pressure extinguishers are effective on Class A fires only, where the quenching and cooling effects of quantities of water are of primary importance. (A variation is the loaded stream extinguisher, of similar construction but with a corrosion-resistant tank. It is filled with an alkali-metal-salt solution, giving some protection against extremely small class B fires.)

This extinguisher is pressurized with air or an inert gas through a hose line equipped with an automobile-type air chuck. Charging pressures vary according to manufacturers, from 90 to 150 psi.

An air pressure gauge is mounted on the valve body and will indicate the air pressure inside the unit at all times. When charging the extinguisher, the water level should be only to the fill mark, so that there will be sufficient room for the pressurized air. Some manufacturers have designed an over-fill tube as part of the water chamber, which will ensure filling to the proper level.

When pressurizing the unit, the gauge should indicate just above the full mark or green line before removing the air chuck, so that when the pressure equalizes it will not read less than full. After charging the extinguisher it should stand for about 24 hours to check for leaks before being put back into service.

Maintenance is relatively simple since the pressure gauge will indicate at all times if the extinguisher is fully charged. Checking the pressure gauge, hose, and nozzle at frequent intervals is all that is necessary. If subject to freezing temperatures, this extinguisher must be protected with an anti-freeze charge, but the extinguisher must be of a corrosion-resistant type able to withstand the action of the chemicals.

How To Use The Stored-Pressure Water Extinguisher

1. The extinguisher is easily removed from its hanger by grasping the handle with the right hand and the bottom rim with the left.

2. Now, lower extinguisher into carrying position. With the right hand, carry extinguisher in a manner most convenient for rapid use.

3. In order to operate extinguisher, it is necessary to remove locking ring pin. To do this, it is best to set exinguisher on ground.

4. Then with the left hand holding combination carrying handle and discharge lever, pull locking ring pin out with right hand.

5. Do not exert pressure on discharge lever when removing ring pin. Now, grab hose nozzle with right hand and squeeze lever with left. Direct the stream at the base of the flames, working from side to side or around the fire. Continuous or intermittent operation is possible.

Extinguisher Fact Sheets

This is one of a series of fire extinguisher fact sheets prepared for the *National Safety News* by Marshall E. Petersen, NSC fire protection specialist. Other extinguishers will be treated in future issues. The *News* is indebted to the Charles R. Teas Co., Dolton, Ill., for facilities used in taking many of the photos.

Cautions On Use Of Stored Pressure

1. Can be used on Class A Fires (wood, paper, textiles, rubbish, etc.)
2. Can *NOT* be used on Class B Fires (oils, paint, grease, gasoline, etc.)
3. Can *NOT* be used on Class C Fires (fires in or near electrical equipment.)
4. MUST BE protected from freezing by installing in a heated cabinet or by charging with a water and calcium chloride solution or approved anti-freeze charge.
5. May be labeled as "LOADED STREAM" which designates that a special charge should be used on re-filling. This charge consists of a special alkali-metal-salt solution which makes this extinguisher acceptable for *VERY SMALL* Class B fires.
6. MUST BE hydrostatically tested to the manufacturer's recommended test pressure every 5 years.

Engine 15's captain shows film on mouth-to-mouth resuscitation to Whittier, Calif., residents. Boy's death spurred the campaign.

Headstart on Lifesaving

WHEN a three-year-old boy toppled into 18 in. of water in a backyard swimming pool at Whittier, Calif., his parents managed to drag him out and call the local fire department. Then, the boy's mother and father stood helplessly by as life drained from their son.

Engine No. 15 sped to the home. Firemen applied mouth-to-mouth resuscitation to the youngster. Later at the hospital successful massage started the youth's heart again, but he died. His brain had been too long without oxygen.

Engine 15's crew were shaken by the experience. They went to their battalion chief to find a way to prevent recurrence of this waste of life.

The meeting produced an educational drive, involving commercial advertising media and a program to bring demonstrations of mouth-to-mouth techniques to Whittier poolsides.

The public relations director of the Model Market Food Store Chain photographed Engine 15's crew making a mock rescue at a swimming pool. These photos, accompanied by description of correct mouth-to-mouth procedures, were published in a special issue of the food chain shopping news and circulated to 13,000 Los Angeles County homes.

The poster layout (with no advertising) was placed in the Whittier paper as a public service. These media reached an estimated 80,000 Los Angeles County citizens.

Then the second phase of this educational program began. Firemen, many of them on off-duty time, gathered residents around home pools for lectures, films, and demonstrations of lifesaving.

The Greater Los Angeles Chapter of the National Safety Council obtained and donated the training film *That They May Live* to aid the fire department's program.

Engine 15's crew and other county firemen have carried similar campaigns to other county areas in California to insure that lifesaving will start *before* firemen reach the site of a drowning.

Fireman goes into pool in demonstration of feet-first rescue entry. Simulated rescues also served as brush-up training for these firemen.

Vivid impression made on residents by drowning-rescue lessons like this one left them better prepared to cope with pool accidents.

A NATIONAL SAFETY COUNCIL TECHNICAL SERVICE

DATA SHEET 448
(Revised)

CRAWLER, TRUCK, AND SIMILAR CRANES

Copies of this data sheet will be available for order within 30 days.

This data sheet is one of a series published by the National Safety Council, reflecting experience from many sources. Not every acceptable safety procedure in the field is necessarily included. This data sheet should not be confused with American Standard Safety codes, federal laws, insurance requirements, state laws, rules and regulations, or municipal ordinances.

1. Motorized mobile lifting equipment is used for widely divergent raising and lowering jobs and under widely different conditions. Accidents involving use of crawler, truck, and railroad cranes, and similar equipment, have resulted in many serious injuries and deaths, extensive property damage, and costly job delays.

2. Figure 1, based upon a special analysis, shows the percentages of injuries that occurred at various locations on and around equipment as a result of accidents during operations. The area immediately around the load proved to be especially dangerous; 41 per cent of all injuries occurred there. Riggers, hitchers, and other workers were struck by swinging, falling, or descending loads, or were otherwise injured in this area, principally for the following reasons:

Location A. Seventeen per cent of those injured were working or standing under suspended loads.

Location B. Another 17 per cent of the injuries resulted when the load was lost because of unsafe rigging, hooks, or slings.

Location G. Five per cent of the injured workers were pushing the load by hand. (This figure includes cases of electric shock due to contact with electric power lines.)

Location H. Two per cent of those injured were hooking, coupling, or hitching with their hands in pinch points.

3. Unsafe practices by operators—making movements without a signal or authority (Location D), overloading (Location J), and operating too near obstructions and stationary equipment such as a power line (Location L)—caused another 12 per cent of the injuries.

4. Violations of ordinary safe practices in fueling, checking water, and other maintenance work, and particularly the dangerous practice

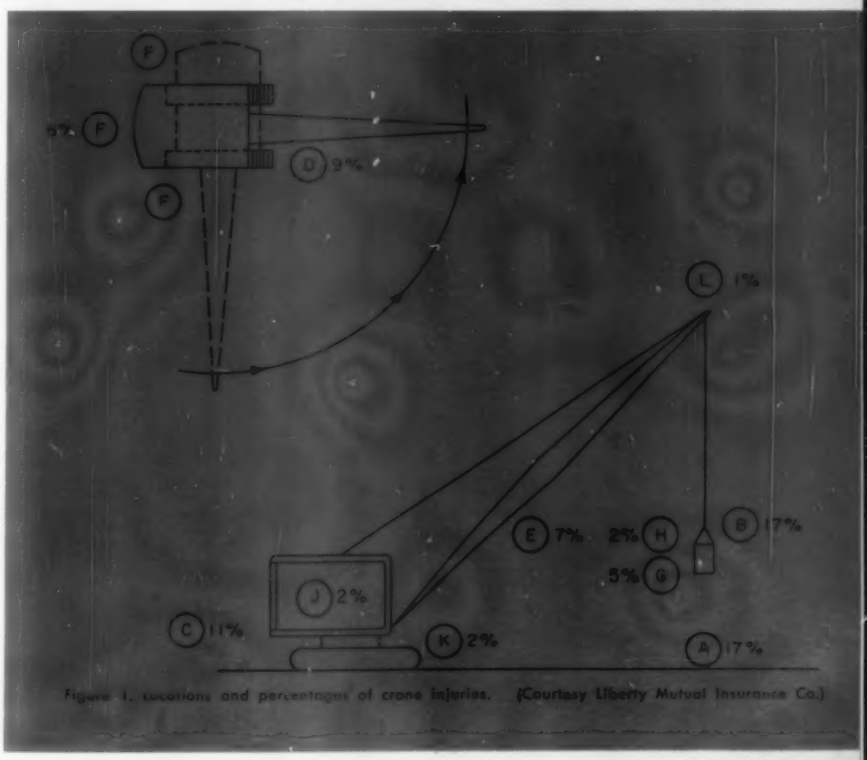


Figure 1. Locations and percentages of crane injuries. (Courtesy Liberty Mutual Insurance Co.)

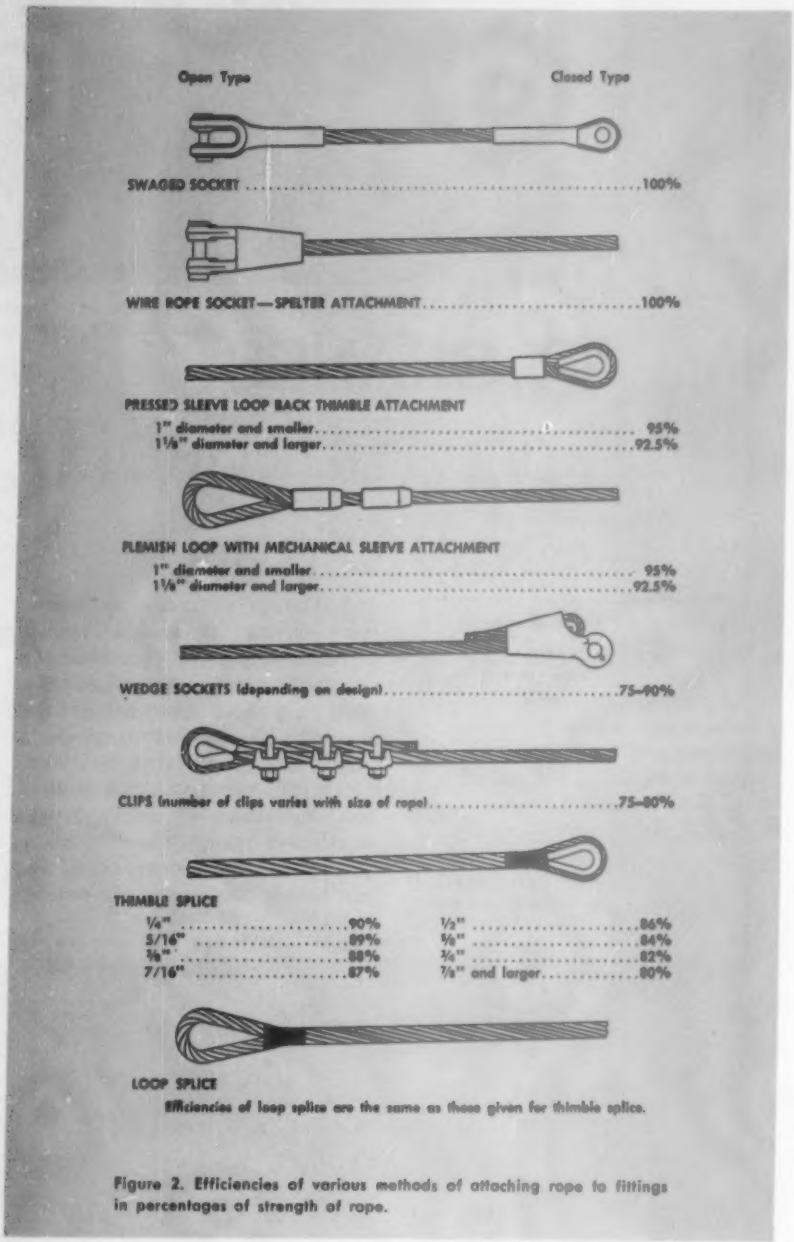


Figure 2. Efficiencies of various methods of attaching rope to fittings in percentages of strength of rope.

of oiling or making adjustments on or around parts in motion (Location C) accounted for 11 per cent of the injuries.

5. Failure of defective booms, cables, and sheaves (Location E) figured in 7 per cent of the total.

6. Working or standing in the line of swing of the crane cab or boom (Location F) accounted for 6 per cent of the cases. Particularly serious injuries occurred when men were caught between the swinging cab and a stationary railroad car, bank, or other fixed object.

7. The unsafe practice of jumping off or climbing onto the crane without using the handhold (Location K) was involved in 2 per cent of the injuries.

8. The remaining 21 per cent of injuries occurred at unclassified locations.

9. The analysis indicates three basic steps for greatly reducing the number of such accidents:

a. Requiring regular and thorough inspections of hooks, slings, cables, booms, and other vital parts, and maintaining them in safe condition. About 25 per cent of the accidents were due to unsafe and defective equipment.

b. Training operators, hitchers, riggers, and other workers in all safe practices.

c. Requiring workers to observe the safe practices.

Maintenance of Safe Equipment

10. The primary responsibility for the safe condition of motorized mobile lifting equipment rests on company officials and supervisors. A company should have a firm policy which requires regular inspections of equipment, immediate reporting of unsafe conditions, and prompt repairs.

11. Manufacturers of cranes and similar equipment supply instructional or operational manuals containing specific information on correct lubrication, adjustment, repair, and operation of their machines. Such a manual should be available in the cab at all times for ready reference.

12. Correct operating and maintenance procedures will prevent excessive strains and wear of vital parts and retard development of unsafe conditions.

Inspections

13. The operator should be responsible for daily inspection of the machinery and for prompt reporting of unsafe conditions. He should be required to demonstrate his knowledge of adjusting, oiling, and otherwise maintaining the machine in safe operating condition.

14. The ground crew leader (pusher) should be responsible for continuous inspection of hooks, chain and rope slings, chokers, and other load attachment parts.

15. A qualified person should be responsible for regular inspection of load and boom cables, sheaves and pulleys, boom and boom stops, and other external appurtenances.

16. *Moving parts must be stopped before men oil, adjust, clean, or perform any other work on or near them.*

17. All guards and safety devices that are removed or displaced for oiling, adjusting, or repairing

Sounding Board

News of Interest in the Field of Noise Control

Your Hearing Conservation Program Begins With an Accurate Analysis of Noise-Exposure

Because prolonged exposure to harmful noises cause early-induced hearing loss which is not easily discernible, the accurate analysis of these noises is a vital part of a proper Hearing Conservation Program.

Accurate Sound Analyzer Necessary

The measurement of noise and its analysis, (the breakdown of noise into its various frequencies), calls for precision instruments and techniques. To make the function of noise measurement and analysis easy for non-technicians, the Rudmose Instrument Co. has designed a new combination sound level meter and analyzer which furnishes accurate sound level measurements and octave analysis with a simplicity of operation making it virtually impossible to obtain incorrect readings.

Also Calibrates Audiometers

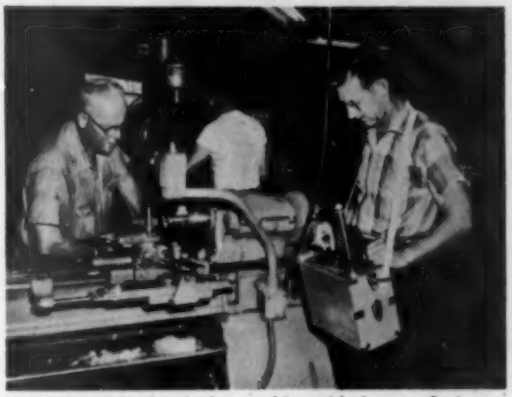
As hearing tests are the most important part of a hearing conservation program, the audiometer output must be checked routinely for accuracy of calibration. The Rudmose R.A. #100 Sound Analyzer is equipped with an earphone coupler for checking the audiometer's accuracy of calibration. Circle 65.

Audiometers and Audiometric Rooms, Too

The Rudmose R.A. #100 Sound Analyzer is an addition to the equipment distributed by Industrial Acoustics Company, Inc., for instituting a complete and effective Hearing Conservation Program. The Rudmose Automatic Audiometer is available for rapid and accurate hearing tests; and IAC Audiometric Examination Rooms for providing a proper environment for obtaining accurate audiograms. Circle 66.

Control of Noise a Factor

Another important part of any Hearing Conservation Program is the control of noise at its source. This is accomplished by the use of IAC complete or partial noisy machinery enclosures or by protecting personnel with IAC "Quiet Rooms" to shield workers from damaging noise. Circle 67.



Measuring noise level of a machine with the new Rudmose #100 Sound Analyzer. The lightweight, completely transistorized unit is convenient for carrying.

R.A. #100 Sound Analyzer being used to check audiometer. The earphone coupler transmits audiometer signals into microphone for checking.

"STEEL CLAD" TELEPHONE BOOTHS KEEP NOISE OUT-CONVERSATION IN

Wall Model "NOISHIELD" Telephone Booth installed in a machine shop.

IAC "NOISHIELD" telephone booths are engineered for high acoustic efficiency to provide ease of conversation in noisy locations or privacy of conversation where desired.

Featuring rugged steel-clad construction, attractive finishes and low cost, these booths are ideal for factories, public buildings, terminals, schools, laboratories, restaurants, stores and for all noisy locations. IAC "NOISHIELD" booths are also available in floor models. Circle 75A.

Using the Rudmose Automatic Audiometer, subject conducts his own hearing test seated within an IAC Audiometric Examination Room.

An IAC machinery enclosure controls noise levels by isolating noisy equipment.

Other literature available:

"Noise-Lock" Doors — Circle 68.
"Quiet" Rooms for Supervisory Personnel — Circle 69.
Control Rooms — Circle 70.
Silencers for Air Handling Systems — Circle 71.
High Intensity Noise Chambers — Circle 72.
"MINI-SIZED" Test Chambers — Circle 73.
Mufflers & Industrial Silencers — Circle 74.
Sound Isolation Rooms — Circle 75.

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CIRCLE 13 ON READER CARD

Figure 3. An insulated safety link. (Courtesy E. D. Bullard Co.)

of machinery must be replaced before the machine is put in operation again.

18. Provision of proper fire-fighting equipment on each machine is an essential safety measure. Periodic checks of the fire-fighting equipment should be made to insure that it remains in high efficiency condition.

Lighting

19. Sufficient light, natural or artificial, should be provided day and night to enable the operator to clearly see the controls, indicators, charts, and instruments necessary to safe operation of the equipment.

20. When a crane is operated at night, it should have bright lights at front and rear for safety in moving about and a boom light to illuminate the working area. Otherwise, the entire area should be floodlighted.

Housekeeping

21. Good housekeeping is essential to efficient operation and accident prevention. A cabinet or other storage compartment should be provided for tools, oil and grease cans, and incidentals. Such items should be kept in their place when not in use.

22. Steps, walkways, cab floors, and other areas where the operator or oiler moves about should be kept free of oil, grease, mud, debris, and any other slipping or tripping hazard.

23. The faces of indicators, charts, and instruments should be kept clean so that they may be easily read by the operator.

Cables

24. The treatment of cables in this data sheet is confined to boom lines. This does not minimize the importance of safe practices as respects selection, care, use of, and rigging with, load lines, slings, hooks, and related elements to ensure their sound condition and accident-free operations.*

25. Maintenance of cables in safe condition is especially important for the prevention of accidents. Cables and fastenings should be looked at each day of operation and inspected thoroughly at least weekly.

26. Wire rope deteriorates particularly from wear, fatigue, and corrosion.

27. The number of broken wires, the amount of wear of the outside wires, and evidence of corrosion are indications of its condition. If a 6 by 19 or 6 by 25 cable has six broken wires in one lay, that section of the rope is seriously weakened. Frequent broken wires along the length of the rope indicate marked deterioration. If wear of the outside wires amounts to 30 per cent of the diameter of the individual wires, the rope is near the end of its useful life.

28. Since undersized sheaves and badly worn sheave grooves excessively pinch and wear a rope, the grooves of sheaves should be checked for size periodically. Broken wires particularly are apt to be found at an equalizing sheave when its diameter is less than 16 times the rope diameter.

29. Crushing and wear of the rope, especially at a crossover point, may be excessive at the drum when two and three layers are wound. Strands may be crushed from being pinched against the drum flange at the end of a layer of rope.

30. Where practical, right-lay rope should be wound on the drum in a left-hand helix and left-lay rope wound in a right-hand helix.

31. Twists and kinks must be avoided when cable is replaced because the deformation resulting from them seriously weakens a wire rope. Kinks cannot be removed without injuring the cable. To uncoil a new cable, the reel should be mounted on a horizontal shaft and the cable spooled off. If the new cable is in a coil, twisting and kinking can be avoided if the free end is secured and the coil is raised to an upright position and rolled out along the ground.

32. To develop maximum strength, cable sockets and clips must be installed correctly. In the case of the wedge socket, the end of the cable is passed through the eye of the socket, around the wedge, and out, so that the pull is in a straight line with the inner wall of the socket and produces no sharp bends in the cable at the end of the socket (Figure 2).

NUMBER OF DROP-FORGED CLIPS AND SPACING REQUIRED TO MAKE A FASTENING WITH 80 PER CENT OF CABLE STRENGTH

Dia. of Cable (In.)	No. of Clips	Space Between Clips (In.)
¾	5	4½
⅞	5	5¼
1	5	6
1⅛	5	7
1¼	6	8

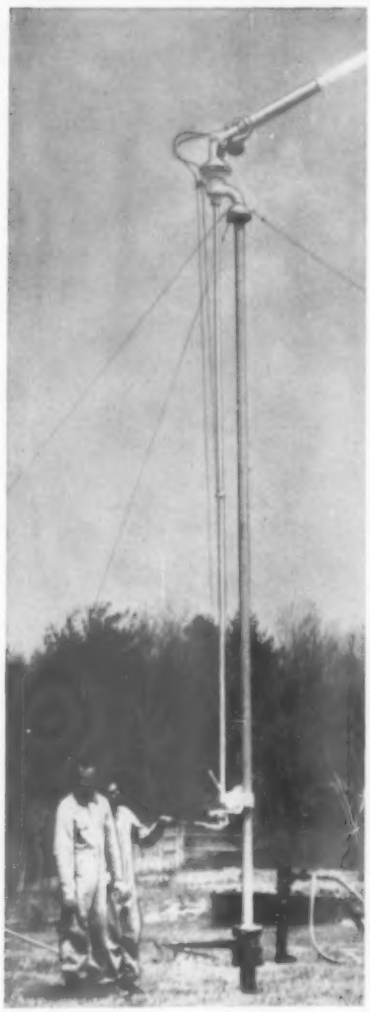
33. The size of the cable determines the size, number, and spacing of clips. Clips should correspond to the lay of the rope; that is, left lay clips should be used for left lay rope, to avoid cutting wires, which occurs when left lay clips are used with right lay rope. The U-bolt bears against the free end, and the clip against the tension side. The space between clips is six times the diameter of the rope.

— *To page 46*

*For the strength of wire rope of various sizes, safe loads, and other detailed information about wire rope slings, reference should be made to Data Sheet 380, *Recommended Loads for Wire Rope Slings*, published by National Safety Council.

Fight fires from any angle...
WITH ROCKWOOD SPECIALTY TURRET NOZZLES

Getting The Upper Hand...



Rockwood Extended Manual Control Turrets can be located 10 to 20 feet above a remote control station on the ground. Greater discharge range increases their fire fighting coverage. Higher extensions are engineered for special applications.

On the ground, on trucks, or towering over the flames, Rockwood Turret Nozzles are valuable fire fighting aids for use in refineries and chemical plants.

In fact, Rockwood makes the most complete line of specialty turret nozzles on the market. Every type is designed to fight fire four ways: with solid FOAM stream, FogFOAM, WaterFOG or solid water stream. And all are easily adjustable to meet changing fire conditions.

Throughout the country these Rockwood advancements are proving they can hit fires harder and faster. Find out how well they can protect your own plant. For an illustrated booklet on this complete line, write to Rockwood Sprinkler Company, Portable Fire Protection Department, 463 Harlow St., Worcester 5, Mass.

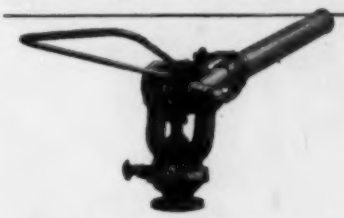
ROCKWOOD SPRINKLER COMPANY

A Division of The Gamewell Company
A Subsidiary of E. W. Bliss Company

Engineers Water
...to cut fire losses

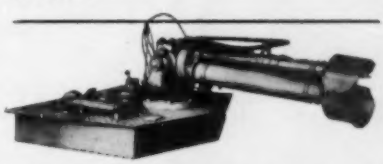
Distributors in all principal cities

Fighting Fires Four Ways

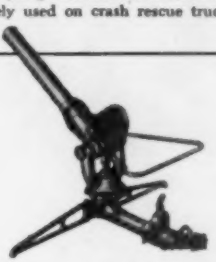


Rockwood Direct Manual Control Turrets give fire fighters "on deck" control from their cab roofs.

A Remote Manual Control Turret is easily handled by a man in the driver's seat. Ideal for fast action.



The Remote Hydraulic Control Type, single or dual model, is power controlled from within the cab. Widely used on crash rescue trucks.



The Portable Type goes off the truck and into action in seconds — wherever hose lines can be brought into action.

CIRCLE 14 ON READER CARD

Figure 4. Insulated crane boom guard. (Courtesy Saf-T-Boom Sales Co.)

Operation of the Crane

Selection of Operators

34. While the manufacturer's manual contains detailed instructions on correct operation of a crane, the thoroughness with which the instructions are carried out depends greatly on the type of man selected to operate the machine.

35. A dependable man who will learn the operation of his machine thoroughly, who will follow instructions, and who has a sense of responsibility, makes the safest and most efficient operator. Thorough questioning of an applicant with regard to his experience and training, followed by a trial period, is justified, because an operator is given responsibility for both an expensive machine and the safety of his fellow workmen.

36. Reckless operation imposes excessive strains and wear on equipment parts. Lack of sober judgment can result in a serious accident. A man should not be employed if he lacks muscular coordination or if he gets confused in an emergency.

37. Pre-employment and periodic medical examinations are recommended to check for defective eyesight, defective hearing, epilepsy, and other ailments that might prove detrimental to safe operation of the equipment.

Safe Loads

38. Overloading causes particularly serious accidents, such as overturning, collapse of the boom, and cable failure. Each manufacturer posts the safe loads for various boom angles in the cab. The load limits specified on capacity plates must *never* be exceeded; furthermore, other instructions should be observed strictly.

39. Boom angle indicators should be mounted on the boom in a position easily visible to the operator.

40. Excessive stresses in cables, slings, and booms result from rapid acceleration and deceleration. Loads should be imposed gradually and raised and lowered without jerking. Fast swinging, which increases the radius of the suspended load, may cause tipping or excessive stress in one side of the boom and, as a result, boom failure.

41. Manufacturers' ratings are based on "free suspension." If a heavy load in a congested place is hung up or prevented from swinging, boom failure may occur from excessive application of power. Also, dragging a load with hoist lines over the boom point may cause tipping.

42. When there is doubt about the machine stability under load, the working radius can be determined as follows:

a. Make certain the crane is on solid level ground.
b. Raise the load a few feet off the ground with the boom extended directly over the side or in the least stable position.
c. Slowly lower the boom, maintaining the load a few feet off the ground, until the machine gives first indication of tipping. Then raise the boom until the radius has been decreased by one-fourth of the distance from the load to the fulcrum.
d. Swing the load at normal speed in a complete circle in both directions, if possible, while holding one foot on the main hoist foot brake. If the machine starts to tip, lower the load.

43. Exceeding the safe working capacity at any radius by using timbers, blocking, and additional counterweights to prevent the machine from tipping is a dangerous practice that has resulted in serious accidents.

44. The maximum lifting capacity of truck cranes is obtained by the use of outriggers. Outriggers must be set on firm ground or, if the ground is soft, on planks (mud sills) to increase the bearing area. The blocking must be sufficient to take some of the weight off the tires. When a capacity load is lifted without outriggers, the deflection on the tires is heavy. If the load is dropped, the rebound from the tires is dangerous.

Boom Stops

45. Serious accidents may occur if the boom is pulled backwards over the top of the cab by the boom hoisting mechanism because of lack of experience or confusion on the operator's part or because of sudden release of a heavy load. Wet or damp weather may cause "dragging" of the boom drive clutch, hoist clutch, or master clutch. The boom may start to rise when the master clutch is engaged, though the boom drive clutch is disengaged.

46. This type of serious accident may be eliminated by installation of a suitable boom stop. Cables are useful boom stops on booms up to 40 feet in length, and are provided by some manufacturers. A cable stop may be used on longer booms only if specified by the manufacturer.*

Power Lines

47. Operation of cranes near energized electrical conductors requires special precautions.

48. If a crane must be operated near a power line, the power company should be consulted about precautions and its safety recommendations observed strictly.

49. Governmental regulations in

*Boom stops for cranes of various sizes and types are discussed in Data Sheet 412, *Crane Boom Stops*, published by National Safety Council.

Get lasting protection from weeds and grasses this easy low-cost way

with UREABOR® 31

YOU CAN WEED-PROOF 10,000 SQUARE FEET IN TEN MINUTES...

...it's the easiest way **to kill weeds** and grasses

A SPECIAL SPREADER simplifies and speeds the UREABOR 31 applications at low rates with accuracy. Spreader holds enough UREABOR 31 to treat 1250 sq. ft. without refilling; weighs a mere 6 lbs. Width of the swath can be adjusted.

STANDARD PACKAGE IS 50 LBS. UREABOR 31 is packed in multiwall paper sacks for easy handling—easy storing. A convenient package, easily disposable, for spotting at predetermined intervals to facilitate large-area applications.

UREABOR 31 IS 3 HERBICIDES IN 1 The plant-destroying powers of 3 proven herbicides are combined in this granular mixture of sodium borates, substituted urea, and trichlorobenzoic acid to yield fast, long-lasting, nonselective results.

UREABOR 31 is a special weed killer for industrial grounds. It lowers maintenance costs... protects property... and improves appearance. UREABOR 31 is effective on a greater variety of weeds and grasses than any other herbicide now on the market. A single dry application gives year-long control! Yet it takes only 1 to 2-lbs. per 100 sq. ft. to do the job! As a granular material, UREABOR 31 is always ready to use... and safe to handle. It's a big time saver too... any man can easily weed-proof ground at the rate of 1,000 square feet per minute.

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CIRCLE 15 ON READER CARD

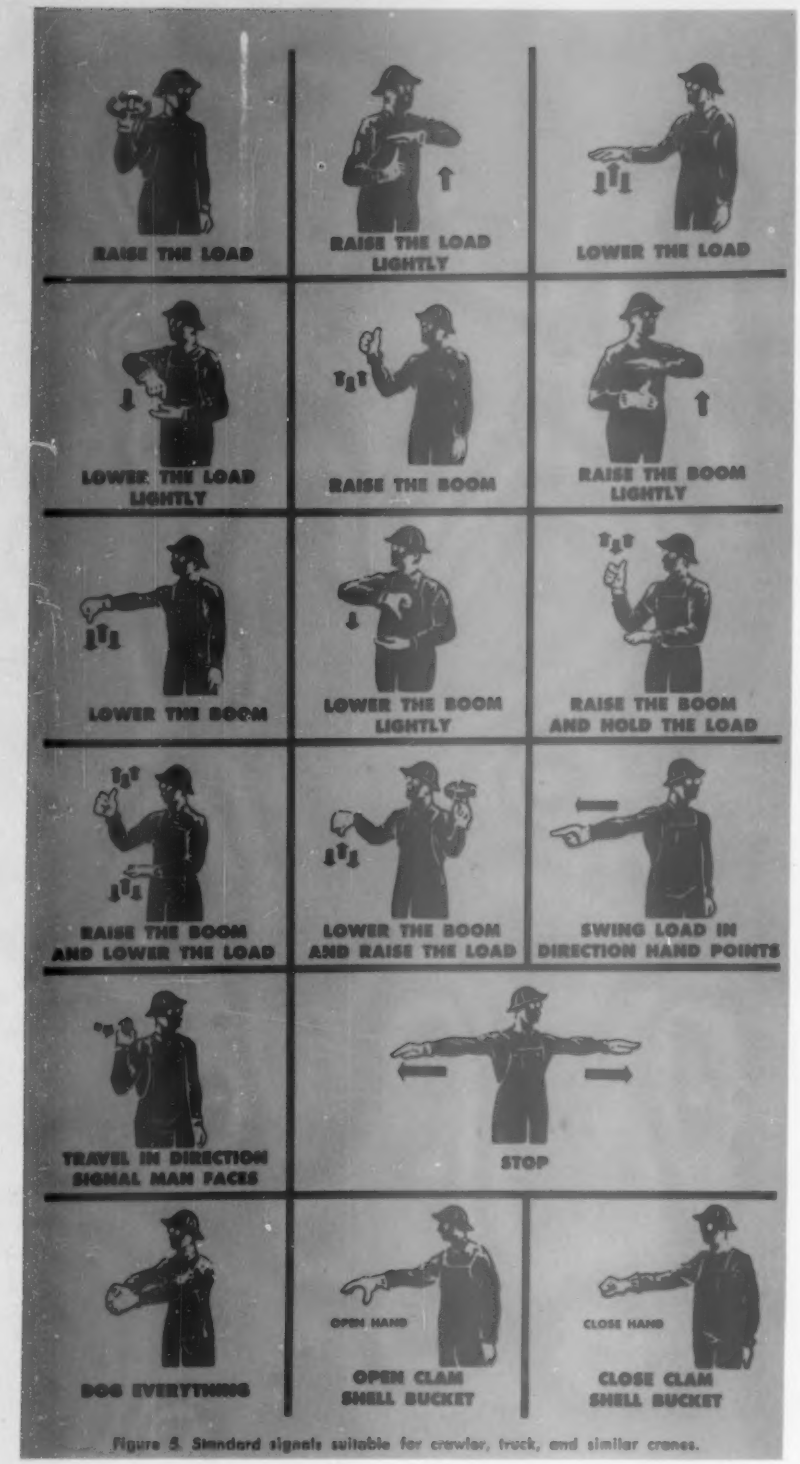

Figure 5. Standard signals suitable for crawler, truck, and similar cranes.

various regions forbid the operation of booms or any other part of a crane within distances varying from 6 to 15 ft. of a source of electrical power. State and local regulations should be checked.

50. An electronic safety device for warning crane operators of proximity to power lines is commercially available.

51. Also commercially available are insulated-link load-line hooks (Figure 3) and an insulated crane boom guard (Figure 4).

Signals

52. Effective control over movements is essential to safe operation of mobile hoisting equipment. During a given work period, only one man (signal man) should be authorized to direct movements of a piece of equipment, and the operator ordinarily should respond only to that individual's signals. However, the operator should respond to an emergency "stop" signal given by anyone. The operator and signal man should have agreed on a series of signals that are thoroughly understood by both. Figure 5 shows signals that have been generally standardized.

53. The operator should refuse to lift a load or make any other movement if it appears to him that anyone is in an exposed position or if the load is not rigged properly.

Safe Practices

54. It is important for workmen to keep clear of suspended loads. The operator, hitcher, rigger, and everyone else working around hoisting equipment must observe this important safe practice (Figure 6).

55. Proper foundations or blocking on which to set a load should have been prepared or placed before the load is moved. Tag lines, poles, or hooks should be used to guide a load into place (Figure 7).

56. If it is necessary to hold a sling or other load attachment in place while taking up slack at the start of a lift, the rigger should use a hook or other device to keep his hands out of pinch points. Moreover, he should keep his body clear of the load so as to prevent injury in case of swing or topple.

57. Congested work areas produce pinch points which often result in serious injuries. Railroad cars, banks, piled material, and structures can form pinch points with the cab of lifting equipment when it swings close to them. Men may sustain internal injuries when caught in these narrow spaces.

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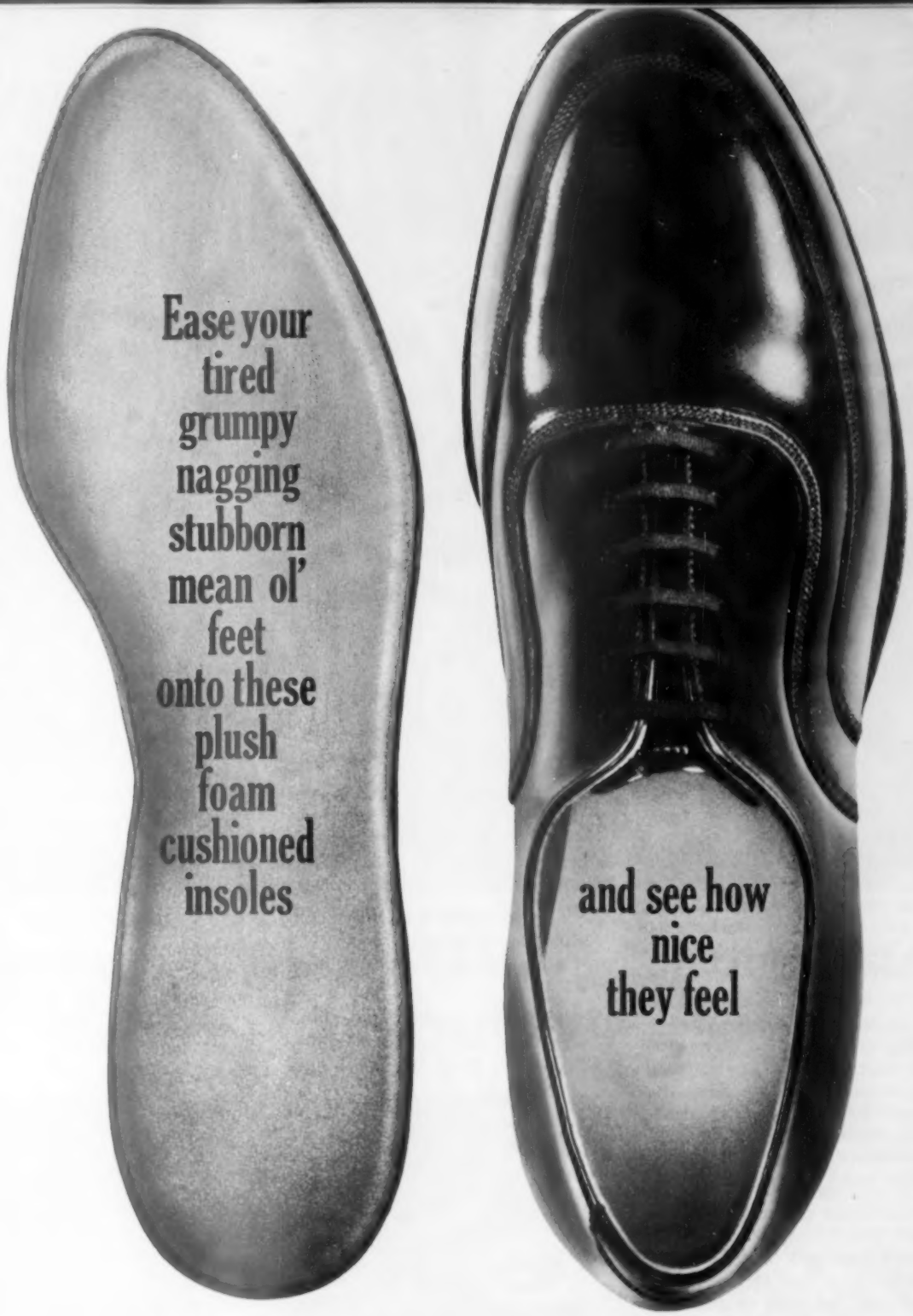

It had to happen sooner or later. For years now, we've worked at making safety shoes that *equalled* the comfort of regular shoes. But now, we've made a safety shoe even *more* comfortable. With no sacrifice in safety features. When feet sink deep down in the soft, plush comfort of these foam-cushioned insoles, any trace of resistance to safety shoes just melts away. *"Hmmm. Not bad looking either. I might just wear 'em on weekends, too."* CLOUD CLUB—the shoe with the *pillow* inside.® In black (00629) or brown (00681); the sizes, C 7-12, D, E, EE 6-12.

SAFETY SHOES

Thom McAn

A DIVISION OF MELVILLE SHOE CORPORATION

Thom McAn Safety Shoe Division
25 W. 43 St., N. Y. 36

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(Check service required)

- ☐ Details of Thom McAn's sales plans
- ☐ Illustrated list of Thom McAn Safety Shoes
- ☐ Set of safety posters

NAME POSITION

FIRM

ADDRESS

CITY ZONE STATE N

Figure 6. Signals are given by one man who is clear of the load and clearly visible to the operator. (Courtesy Bethlehem Steel Co.)

Figure 7. Tag lines are effective for safely guiding loads into position. (Courtesy Bethlehem Steel Co.)

These areas should be barricaded off, and warning signs should be posted.

58. While the hook always should be centered over a load, lifts in congested areas may of necessity be made at an angle. Unless the hitcher realizes the hazard and gets into the clear before signaling, he may be caught between the moving load and the nearby obstruction (Figure 8).

59. When a lift must be made at an angle, the operator must not swing or revolve the crane against the momentum of the load acting in the opposite direction. "Gunning" the motor to offset momentum, especially where the load is not following the swing of the boom, often results in boom failure.

60. Close quarters also require such precautions as carrying crane hooks high and securing slings to the hooks so that they do not drag and catch on piles or machines.

61. A runaway may occur when a crane is being moved up or down a grade if a clutch or brake, or both, should fail. A crane should be snubbed when ascending or descending a grade, especially when turning on one. Dragging a large timber crosswise behind the tracks when a crane is ascending a grade is a good precaution against a runaway.

62. When a crane is being moved about in a yard, the boom must be carried low enough to clear all overhead wires and pipes, and a signal man should precede the crane.

63. No employee or other person should be allowed on the crane unless his duties require him to go there.

64. Before leaving the crane for any reason, the operator should set the brakes, block the wheels, lock the boom, and place the levers and controls in a neutral position.

65. All engines should be stopped before being refueled.

66. Before any repair or maintenance work is done on or under a crane, all engines must be stopped and the main or battery switch locked in the "off" position.

ACKNOWLEDGMENT

This data sheet was revised by the staff of the Industrial Department, National Safety Council, and a special committee of the Council's Construction Section Executive Committee members.

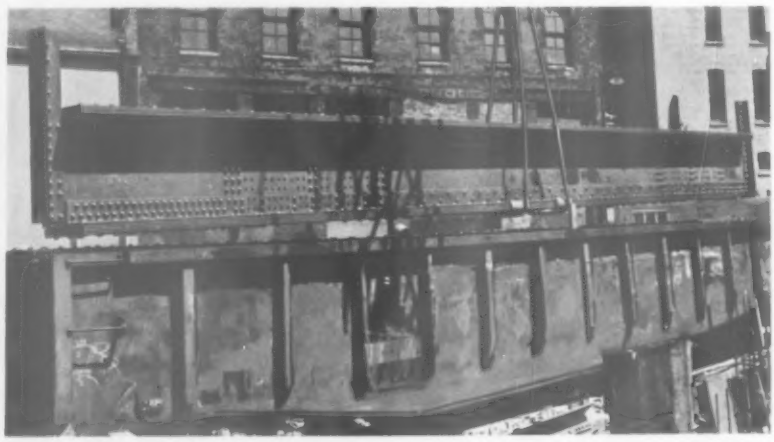

Figure 8. All men should be out of a railroad car before lift is made. (Courtesy Bethlehem Steel Co.)

E. W. Ferry Screw Products, Inc., daily produces more than two million fasteners of many types for the automotive, airplane and appliance industries. This company also pioneered volume production of stainless steel screws.

Pittsburgh COLOR DYNAMICS® Painting System increases efficiency...improves morale

- **Lessens physical fatigue of workers**
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- **Helps eliminate accident hazards**
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• **Both workmanship and production** were improved by Pittsburgh COLOR DYNAMICS in the E. W. Ferry Screw Products, Inc., Cleveland plant. It can help *your* firm achieve like results.

• **This scientific painting system,** based on reactions to the *energy* in colors, improves morale by making work areas more cheerful. Focal and eye-rest colors on machines help operators see their work better, thus reduce fatigue, boost efficiency. Safety colors on controls, material-handling equipment and traffic lanes help reduce accidents.

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Proper Glove Care Returns 'Plus' Profits

Industrial gloves are a first-line defense against accidental injury to workers' hands. Properly treated, they can be a very cheap form of insurance against cuts, caustics, and dermatitis.

Thousands of dollars are lost each year through improper care of industrial workers' gloves. And the toll keeps mounting, with increases in the labor force.

Gloves are an industrial "tool," often with highly specialized uses, such as the very fine, tissue-thin surgical gloves borrowed by industry from the medical profession for anti-tarnish inspections. They are entitled to the same degree of care as any other specialized plant tool.

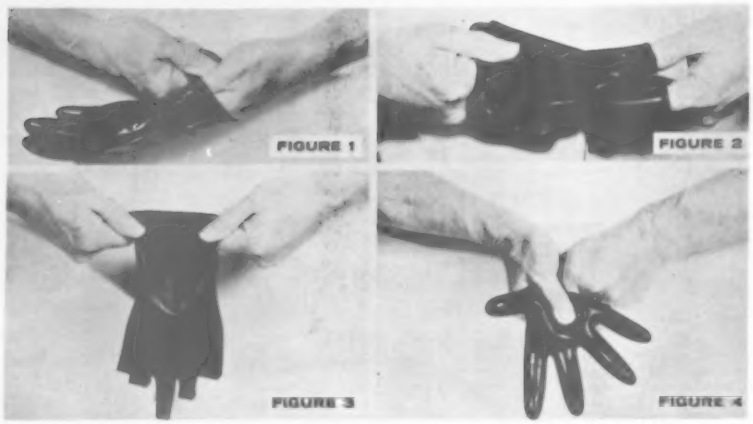
The Wilson Rubber Co. of Canton, Ohio, manufacturer of rubber industrial gloves, offers the following suggestions for glove care and maintenance:

Putting on Gloves

1. Turn back cuff of gloves about two inches. (If gloves appear to be a snug fit, they should be prepowdered with talc or soapstone for greater ease in putting them on.) Grasp cuff on palm side of glove between thumb and "V" of forefinger (Figure 1). This prevents fingernails from injuring gloves.

2. Insert fingers into glove and, while slowly raising both hands to chest-high, push on glove. Unfold cuff.

3. Repeat this procedure with the other glove.



Removing Gloves

1. Turn back cuff of glove about two inches. Grasp cuff on palm side of glove between thumb and "V" of forefinger (Figure 1).

2. Slowly raise both hands to chest-high and, at the same time, pull off glove (Figure 2).

3. With fingers of glove pointing down and palm side outward (Figure 3) twirl glove upward toward

— To page 64

Abrasive particles are rolled densely and uniformly into high-quality steel and act as friction grips for safe footing.

There's never a slip on A.W. ALGRIP

(the only ABRASIVE rolled steel floor plate)

Step up your plant safety with Algrip—the world's only abrasive rolled steel floor plate. It provides safer footing where splashing water, grease, oil, ink mist or other slippery substances might otherwise pose serious plant hazards. Even on steeply inclined surfaces, Algrip creates firm traction for workmen's shoes and the wheels of rolling stock.

This high quality steel plate is light enough to use as flooring overlay and is strong enough for independent flooring. Fabrication is simple. You can shear, form, weld and drill it with standard shop equipment. Fire and chemical resistant, Algrip flooring is approved for safety by Underwriters' Laboratories. Write today for Bulletin AL-S1.

ALAN WOOD STEEL COMPANY

Conshohocken, Pa. • STEEL PRODUCERS WITH THE CUSTOMER IN MIND

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CIRCLE 17 ON READER CARD

Thinking Topside

Do you find that you come up with brilliant comments and ideas—but always too late to use them? Try thinking topside for a change.

Some people don't think and give out stupid advice. Some don't think and accept stupid advice. Others sometimes give you the impression they're just plain stupid.

Some typical quotes illustrating fouled up thinking that hurts include:

"Only pansies wear goggles."
"Doggone, I thought he was gonna keep going."
"I told you to keep a lookout for the cops."
"50 ppm means 50 people pass-out maximum."
"Who glommed onto the pennies I had stashed in the fuse box?"
"I thought he said start the machine."
"Clean it with this here gasoline."
"Blow the wad on one more roll."
"But dear, I don't smell any perfume."
"Pry it loose with the screwdriver."
"Take four pills and get tranquil quicker."
"I drink 'cause it irritates the spouse."
"Why guard it, nobody ever comes here."
"Stick your finger in the socket and see if it's live."
"Tired, shmired, aintcha heard of pep pills yet?"
"Charlie, he ate the whole bottle of aspirins!"
"Gimme one for the road."
"The car's outa control!"
"Gimme the waste rag to wipe the blood off this cut."
"Who swiped the rope I had the press operating lever tied down with?"
"Tell 'em to play in the street, nobody'll hit 'em."

Some folks are famous for their sharp thinking and brilliant remarks. These won't give enough mileage to get you out of town—unless in an ambulance or hearse.

ROBERT D. GIDEL

President Sets Conference On Occupational Safety

President John F. Kennedy has set March 6-8, 1962, as the dates for the next biennial meeting of the President's Conference on Occupational Safety. He named Secretary of Labor Arthur J. Goldberg chairman of the conference.

Calling the conference, the President said:

"The purpose of the 1962 Safety Conference will be to re-energize and expand our efforts to reduce the on-the-job deaths and injuries. Despite more than a generation of organized safety work, 13,800 workers were killed last year in job accidents. There were also nearly 2 million disabling injuries. This toll must be reduced. Since new technology constantly changes methods of work, we must continuously improve our safety techniques to keep pace with rapid industrial progress. This is the challenge which will face the President's Conference on Occupational Safety when it meets next year."

The first conference was called in 1948 by former President Truman.

More than 3,000 leaders of American business, labor, government, education, insurance, and private safety organizations are expected to attend the 1962 meeting.

Blaze Battlers

– From page 33

els of radiation you must decontaminate.

It is impossible to neutralize radioactivity. Radioactive materials emit radiation in accordance with basic physical laws for each specific material. There is nothing we can do that will change this.

First, rely on removal of contamination. The cheapest measure is to allow the contamination to die off by natural decay if the half-life of the material is short enough to make this a reasonable solution.

Considering measured radiation levels and the half-life of the contaminant, it is possible to calculate when the radiation levels will be down to an acceptable figure. If the time limit is not inconsistent with use of contaminated equipment, this represents one way to solve the problem.

Usually, we're not fortunate enough to have only short half-life materials to deal with, and we have the problem of picking up and removing radioactive material from the contaminated surface.

The heart of the problem is the nature of the bond between the radioactive contaminant and the contaminated surface. If this bond is tight and material adheres strongly to the surface, it will be difficult to remove it.

If this bond is not tight, it will be relatively easy to remove it. In general, the answer lies in how easily the material can be washed.

For instance, clothing can be washed in a laundry designed to han-

"There's one guy who's learned the value of protective equipment!"

dle contaminated clothing, and the contamination removed to a satisfactory level.

If there is no such laundry in your area, the cost of shipping clothing to and from such a laundry and making arrangements may indicate it is cheaper to get rid of the clothing.

Other equipment might require washing, scraping, or actual removal of painted surfaces to remove imbedded contamination.

Again, with respect to the sort of contamination problems that might be encountered, if the radioactive material handled is of short half-life, the question of contamination need not concern us too much nor interfere too much with the operations of the fire department.

If the contaminant is a serious one and its removal possibly an expensive and a prolonged operation, we should take much more care in the fire fighting operation to prevent undue contamination.

The washing of equipment at the scene of the fire or accident will go a long way toward reducing the contamination problem to reasonable size. By reducing contamination to that adhering tightly to the surface of the article, we greatly reduce the problem of spreading contamination from the fire station to the homes of personnel.

The general rule is to decontaminate to the point where no person would receive more than the maximum permissible level of external radiation exposure or receive in his body more than the permissible amount of internally significant radioactive material. This level varies depending on the use to be made of the contaminated item.

For instance, a higher level of

A comprehensive index to Volume 83 of the NATIONAL SAFETY NEWS (January thru June, 1961) is currently available from the Council. Also indexed are the February and May issues of *The Journal of the American Society of Safety Engineers*. Free copies may be had by writing: Library, National Safety Council, 425 N. Michigan Ave., Chicago 11.

contamination would probably be acceptable on a public highway out in the country where people travel at 60 miles an hour than would be permitted on a city street where persons might walk or might remain in one location for an extended period.

Likewise, the acceptable contamination level for personal clothing, such as shirts and pants, is far lower than the contamination level that might be acceptable as a residual on an aerial ladder.

If assistance has been asked through the AEC's Radiological Assistance Plan, advice on contamination levels and decontamination techniques would be available from the AEC Radiological Assistance Team.

Your fire department also should have made the necessary local contacts to obtain adequate radiation advice in the event of such an incident.

Special Fire Problems

Decontamination required after radiation accidents and preparation for contamination bring about two specific types of fire protection problems.

In cleaning up radiation contamination, much use is made of acetone and nitric acid [*Caution: Do not mix these substances together.*] Both are used with rags or paper tissues. When this material has been used to clean up the contaminated area, it is itself contaminated and must be held for special disposal.

Nitric acid-soaked cellulose fiber material is an ideal means for the start of a fire by spontaneous ignition. When fire ignites the material, radioactive contamination can be spread around the area cleaned up.

In cleanup of a contaminated area, it is necessary to prevent the spread of contamination by the cleanup forces. Often sheets of paper are taped to the floor and over equipment.

If the area involved is sizable, a flash fire hazard may be created. While smoking would be prohibited because of the health hazard, other sources of fire might be introduced unless special precautions are taken.

Two common possibilities involve use of extension lights to illuminate areas under equipment and use of propane torches in removal of tile floors.

These hazards should be brought to the attention of the plant management, and a fire watch set up when justified by circumstances.

The spontaneous ignition hazard is not widely recognized by people in plants and laboratories. Fire prevention divisions should be alert to newspaper publicity about radiation accidents in the area so a check may be made to determine that cleanup is being handled satisfactorily and no fire hazard is created as a result of the cleanup.

Frequently, steps are taken prior to introduction of radioactive materials to minimize the cleanup problem. Design of the laboratory planned and choice of construction materials used are carefully considered. Hard finish, easily cleaned materials with few crevices and corners are preferable.

In conversion of existing facilities to handle radioactive materials, and also in the design of new facilities, provision is often made for the use of so-called strippable films. These films are a paint-like material which can be sprayed on and will provide a surface finish somewhat like paint.

How to remove the hidden cause of offensive washroom odors

A tough job done easily by West Klenobowl

The critical public demands much of washrooms *and* the people who must care for them. Unpleasant odors can easily lose customers for a businessman . . . and certainly hurt the reputation of *any* building's management.

The hidden source of washroom odors

The answer seems simple enough: remove the cause of the unpleasant smell. But it's *not* quite that simple, as you know. The cause of the odors is *hidden.*

Toilet bowls and urinals collect certain salts and organic soils. Inevitably. And in a comparatively short time. Only a minute amount of this organic material need gather in corners and crevices to cause repelling odors.

This material forms in hard-to-get-at places. Then if allowed to build up, your maintenance costs build up too. Custodians must return again and again to try to cope with the odor. And eventually even costly overhauls may be necessary to uncover the hidden source of the problem.

A specially formulated answer

To stop such troubles before they start, West has developed a specially formulated combination cleaner and disinfectant: Klenobowl. When the simple instructions are followed Klenobowl attacks and breaks down the malodorous organic deposits. Quickly. Thoroughly. Deep into the corners and crevices.

West Klenobowl is a concentrated acid formulation with three important and exceptionally effective properties: 1. corrosion inhibition; 2. acid stable detergency; 3. germicidal activity. Together, this three-way action cleans away the cause of odors *without* harming porcelain.

One more extra — to assure convenience: Klenobowl is packed in one-quart bottles, one dozen per carton, with each carton containing its own swab mop.

For complete details about Klenobowl cleaner and disinfectant — and a free demonstration — the man to see is your local West representative. Or mail the coupon below. West Chemical Products, Inc., 42-16 West Street, Long Island City 1, N. Y. In Canada: West Chemical Products, Ltd., 5621-23 Casgrain Avenue, Montreal, P.Q.

WEST CHEMICAL PRODUCTS INC.
WEST DISINFECTING DIVISION

"KLENOBOWL" is a registered trademark of West Chemical Products, Inc.

West Chemical Products, Inc.
Department L-SN
42-16 West Street, Long Island City 1, N. Y.

☐ Please send me further information on West Klenobowl

☐ Have your representative call

Name_____

Company_____

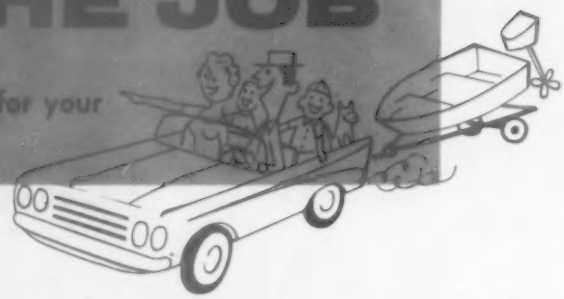
Address_____

City_____ Zone____ State_____

CIRCLE 23 ON READER CARD

OFF THE JOB

Planning safety programs for your plant and community



By PAUL E. SHEPPARD
Director, OTJ Safety Activities
National Safety Council

Boys See Film, Save a Life

The Bell Telephone Co., Pa., reported in *Telephone News* that the company's copy of the film "Mouth-to-Mouth Breathing" was shown one morning to high school students. That afternoon, two of the boys, Nicholas Dubina and Frank Zaccone, met a woman running across a field with a baby that had fallen and stopped breathing.

The boys applied mouth-to-mouth resuscitation as they had seen it done in the film, and saved the 14-month-old baby's life.

Cutie Sparks Car Safety

Among recent reports from National Safety Council members on the use of vehicle inspection programs as part of off-the-job activities came a report from Robert Beeson, supervisor of safety and training, Hagerstown (Ind.) Plant, Perfect Circle Corp.

Beeson and Jim Lagomarcino, editor of the company magazine, worked up a novel promotion to encourage workers to drive their cars through civic safety check lanes.

A series of photos of four-year-old Laurie Harris, daughter of a company employee, were the key to the promotion (see below for samples).

Beeson's comment on the promotion's effectiveness: "We believe that anything we do on off-the-job safety reflects directly on our on-the-job safety program."

Seasonal Approach To Family Safety

An approach to off-the-job safety promotion in company publications is suggested by an article in the *Bethlehem Review*, Bethlehem Steel Co.

The editor selected an employee and made him the subject of a story discussing summertime off-the-job safety. The employee expressed how he felt about on-the-job safety, and how he hoped to apply the same principles to his summer vacation.

The story described his early preparations for the family vacation; thorough check and servicing of the car; installation of seat belts; and family discussions of such topics as driving, boating, and water skiing.

The editor's idea may be one that other company publications could use to spotlight off-the-job safety. The forthcoming hunting season or winter sports could be used as a background for similar articles.

Construction Section Letter Devoted To Off-the-Job

The July, 1961, issue of the *Construction Section Newsletter* was devoted entirely to nonoccupational safety.

Articles spelled out the viewpoint of insurance carriers, Army engineers, a water safety association, the contractor, and a state safety association.

Key OTJ Promotions To Fire Prevention Week

Oct. 8-14, 1961, Fire Prevention Week, is an excellent tie-in for off-the-job programs. Bulletins, company magazine articles, and letters to employees can promote home fire prevention activities. The National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass., has an abundance of campaign material.

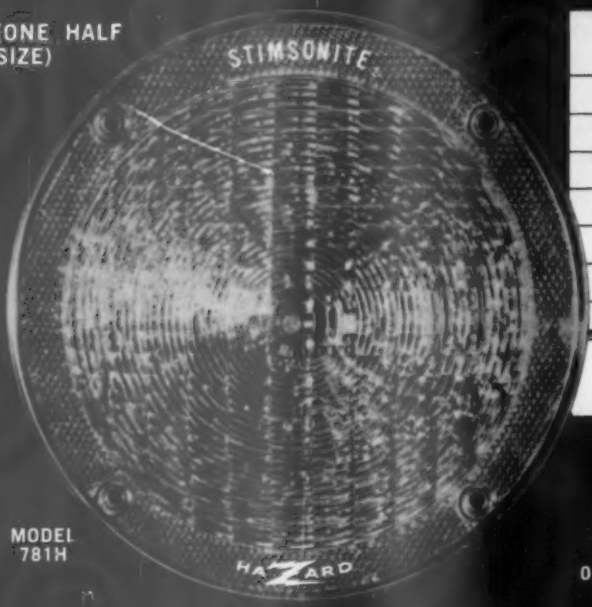
Trick photos like this one (that's Laurie Harris both times) . . .

. . . and this kind of coquetry inveigled men into vehicle check lines.

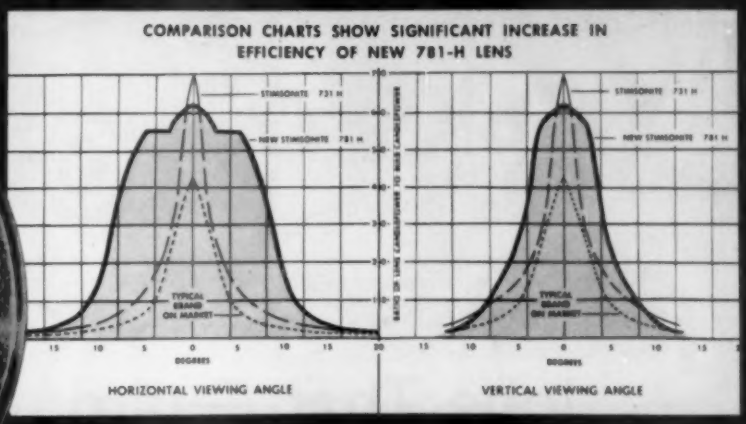
and now . . . STIMSONITE® HAZARD

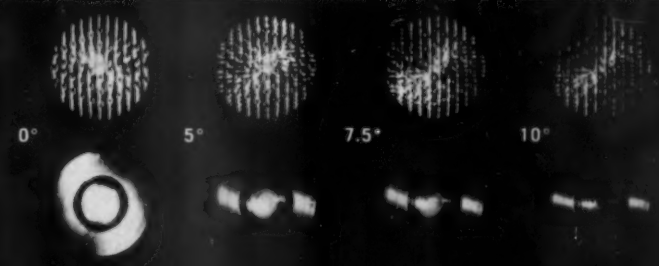
The Lens that gives FULL ILLUMINATION for FLASHERS and WARNING LIGHTS

(ONE HALF SIZE)



MODEL 781H





COMPARISON — New Stimsonite Hazard Lens (shown on top) and typical radially symmetrical lens as viewed from various angles.

Remarkable new lens system projects a rectangular beam of light

The STIMSONITE HAZARD OPTIC SYSTEM gathers previously wasted (loss) light—packs it—than projects it for full illumination on flashing barricades and other warning devices.

Efficient distribution means increased intensity—thus the HAZARD signal stands out night **and** day. The large uniform signal commands greater attention—is seen at greater distances and from greater angles.

Specify Stimsonite HAZARD for vital safety features:

- Full illumination—high signal intensity . . . largest signal size.
- Improved detection and localization.
- Added ring of reflex for signal maintenance at all times.*
- Fits all standard 7" barricade units.
- Permits saving of battery power . . . longer life and less servicing.

FULL ILLUMINATION with HAZARD MEANS:

No "fire-flies"

No thin "propeller" of light

No loss of signal due to mis-aim

*Also available as an **all optical lens** without ring of reflex.

specifications and detailed engineering study available from —

STIMSONITE DIVISION

Elastic Stop Nut Corporation of America

3445 N. KIMBALL AVENUE, CHICAGO 18, ILLINOIS

Plant worker Ray Bendtschneider methodically checks a CO_2 extinguisher for workability, proper weight, and general condition. Doing the job well may save lives.

A low-pressure steam line gets a weekly going over to forestall pressure failure or buildup. Here powerhouse employee Bob Reed checks steam traps, insulation, valve condition and position, and supports.

All the plant's safety showers are checked once each shift. Here Knute Hansen satisfies himself that this unit near an acid unloading area is functioning properly.

Jobs That Guard Jobs

THESE VIGNETTES of little-mentioned but important safety jobs at E. I. du Pont de Nemours' Clinton Cellophane Plant, Clinton, Iowa, are examples of the kinds of preventive maintenance that keep a well-constructed safety machine running smoothly.

Not considered extra duties, these jobs are part of the regular routine. Workers who do them are specialists, keeping precise records of inspection and maintenance. Some are daily jobs; others are weekly and monthly activities.

Not shown but also regular duties are checks of elevators, fire hose and fire hose housings, alarms, heavy rigging equipment, special tools, fire doors, sprinkler systems, and lift trucks.

All these chores have the same purpose: to insure that carefully engineered safety devices and equipment don't fail because of improper testing, adjustment, or maintenance.

Attention to such safety detail undoubtedly has contributed to the Clinton plant's record of no disabling injuries for almost three years.

Before Joe Crowler puts his weekly OK on the plant's dozen portable and spring-operated loading ramps, he tests handles, cables, counterweights, hinges, and welds.

Joe Chandler regularly tests and inspects 45 millroll carriers. Checking includes link inspection, chain length, locking latch, and a 1,200-lb. lift test with dummy roll.

Checking the plant's 48 scales insures the accuracy necessary for operational and end-product safety. Otto Rasmussen does the job with master weights, checking some instruments weekly, some once a month.

Frequent checks of the gauge and valves on this water pump are made by Vern Morrow to make sure a constant 125-lb. pressure is kept on fire system lines.

CESCO Polyfit Safety Glasses have them all--

including New Mahogany Frames!

Go all the way in simplifying your inventory problems with CESCO Polyfit...the modern safety glasses that fit over 90% of your workers. Polyfit glasses are designed to conform to the widest range of nose and facial contours. But besides being practical, they're smart looking in every detail. In fact, they rival the latest style personal glasses in appearance.

Get Polyfit glasses in the widest range of features...

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- Full selection of side shields—Wire Screen, Perforated Plastic, Flat Fold
- New Temples—Rhodium plated for greater resistance to corrosion. New welded hinges. Comfort cable or spatula ends. Cable temples available with complete vinyl coating
- Two Eye Sizes—No.316 (46x39mm), No.318 (48x41mm)
- F-7 Shape 6.00C Super Safety Lenses—in clear or antiglare glass or plastic
- Polyfit Bridge—extra thick for longer service. Contoured for perfect fit
- Sur-Lok Pins—hold temples securely to frame

New.. **POLYFIT WITH WIRE SCREEN SIDE SHIELDS**

Ideal for jobs involving high heat or humidity. Black oxidized screen...fine or coarse mesh... cuts light reflection, promotes better ventilation

SEE *your CESCO distributor or write our Chicago office for prices and complete information about CESCO Polyfit Safety glasses*

CESCO FOR SAFETY

CHICAGO EYE SHIELD COMPANY • 2705 West Roscoe Street, Chicago 18, Illinois

CIRCLE 23 ON READER CARD

Glove Care

– From page 52

body to trap air inside gloves.

4. Quickly squeeze cuff of glove tightly to hold trapped air (Figure 4). With thumb on palm and forefinger on back, press on bulge in glove to force trapped air to straighten thumb and fingers.

5. Repeat this procedure with the other glove.

Care of Gloves

1. Never leave your gloves inside-out. This traps vapors which will quickly deteriorate the glove and make them more subject to ozone cracking.

2. Never leave gloves with cuffs folded over. This places the folded part under stress, weakening it and causing it to tear easily.

3. Periodic cleaning of gloves is fundamental to remove the build-up of solvents, degreasing agents, etc., which shorten glove life. Gloves with "firmhold" or rough finishes require thorough cleaning because the "depressions" or "valleys" forming the finish trap solutions which will deteriorate the glove.

4. Where swelling of gloves occurs, take the gloves out of usage, to permit solvents to evaporate off the glove, thus restoring original shape. Rotate several pairs of gloves in this situation, since swelling of glove reduces its resistance to tearing.

5. Above all, wear gloves that fit properly. Proper fit eases putting on and removing gloves without abusing them.

Air-Testing Gloves

1. With fingers of glove pointing down and palm side outward, similar to Figure 3, twirl glove upward toward body to trap air inside glove.

2. Squeeze cuff of glove tightly to hold trapped air (Figure 4). With thumb on palm and forefinger on back, press on bulge in glove to further inflate glove.

3. Hold inflated glove close to face and ear. Listen for air escaping from holes.

4. Repeat this procedure with the other glove.

MCA Sponsors Safety Workshop

More than 100 industrial safety experts from the United States and Canada are expected to attend a chemical industry safety workshop in Niagara Falls, Canada, Sept. 27.

Sponsored by the General Safety Committee of the Manufacturing Chemists' Association, Inc., the workshop will provide committee members with an opportunity to discuss common safety problems with production, technical, and safety personnel from the chemical industry in Canada, northern Pennsylvania, and western New York.

J. S. Queener, manager, Employee Relations Department, E. I. du Pont de Nemours & Co., Inc., and chairman of the MCA committee, will be the workshop moderator. Collaborating with MCA on the workshop will be the Niagara Division of the Industrial Accident Prevention Association, and the American Society of Safety Engineers.

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DON'T LET BAD AIR SLOW UP PRODUCTION!
Improve your men's efficiency, safety, health and comfort. Get rid of dangerous gases, fumes and stagnant air with a COPPUS "Blue Ribbon" Vane Ventilator. This ventilator brings fresh air to men in confined places . . . acts as both a safety device and a production tool. To keep your men's efficiency and morale high, feed them better air.

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For Exhausting:
- ☐ welding fumes
- ☐ noxious fumes
- ☐ fumes from reactors, tanks, etc.

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Company.....

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COPPUS
BLOWERS

By J. R. GAREAU

Safety Manager, Calumet Div.,
Calumet & Mecla, Inc., Calumet, Mich.

DOES the present hard hat provide all head protection needed by an underground worker? Here, in Calumet, Mich., where we mine native copper on a pitched foot, we say "No!"

We've talked to many mining people, hard hat manufacturers, plastics company representatives, safety personnel, and everyone says the same thing: The present hard hat is *not* complete protection. But nobody does anything about it!

If we're going to prevent more head and face injuries underground, a different hard hat is one area to explore.

This safety manager believes present hard hats give inadequate protection in underground mining. "Develop helmet-type hard hats" is his suggestion.

We Need "Helmet" Hard Hats Underground!

A study of injuries our underground personnel have received and continue to suffer points up these shortcomings of present head protection:

Incomplete coverage of skull and face. The present hat sits at least an inch above the ears on most men, leaving the temples, base of the skull, forehead, ears, and all of the face vulnerable to flying objects. The only real protection is provided against direct hits from above.

We've had fractured cheekbones, lacerated ears, and basal skull injuries that certainly would have been prevented by a hard hat giving more coverage. Our government recognized this when designing World War II head protection. German helmets of World War I extended down to the nape of the neck. Many sportswear makers build in more coverage into head protection than our hard hats have.

Suspension harnesses don't give enough stability to the hat. Unless the harness is so tight it makes the wearer quickly uncomfortable, present hard hats can be knocked off easily, fall off readily when a man falls, or are tipped sidewise when a man bumps into something.

A hard hat that can't be kept on if the worker falls on the ground, or in case of slipping and stumbling, leaves the wearer open to head and facial injuries. We have injuries in our records, including fatalities, that would have been minimized if the hard hat had stayed on the man's head. Other operations will find similar statistics, I'm sure.

Wearing of chin straps for stability is objectionable. We feel the wearing of chin straps to keep hard hats on in underground work can never be enforced. We're well aware of the chafing effects of chin straps underground.

Some companies, with a compulsory chin strap safety rule, have been forced to void the rule or have a labor problem on their hands. Former armed services personnel indicate GI's wouldn't keep chin straps fastened despite threat of discipline. Chin straps apparently are impractical underground.

A hard hat fashioned after a football helmet more nearly meets needs

— To page 69

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INLAND STEEL COMPANY

STEEL
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Center for Safety Education Schedules Eight Courses

Eight courses on accident prevention will start Sept. 25 at the Center for Safety Education, New York University, New York City. Spanning Sept. 25, 1961, through Jan. 18, 1962, this instruction is directed to management and employees of industry and business.

Accident Prevention—Its Background, Objectives and Relationships. (Early industrial developments, public disasters, accident control legislation, insurance company safety services, relationship to production efficiency, professional opportunities.) Mondays from 8:10 to 9:55 p.m. Paul C. Lamb, instructor.

The Philosophy and Basic Principles of Accident Prevention. (Fundamentals and philosophy of accident prevention, relative importance of unsafe acts and mechanical hazards, opportunities for correction of accident causes, sources and methods of securing accident facts, corrective action, creating interest.) Mondays from 6:15 to 8 p.m. Ralph J. Crosby, instructor.

Industrial Hazards, Mechanical and Personal: Control Methods. (Hazards of structures and grounds, plant equipment and apparatus hazards, lighting and ventilation, metal working and wood working, food manufacturing, textile operations, approaches to corrective action.) Tuesdays from 8:10 to 9:55 p.m. William J. Hyland, instructor.

Collection, Analysis, and Use of Accident Data. Technical Sources. (Sources: internal and external, assisting agencies, what is essential, codes and practices, collection of essential data, how to analyze data, uses of accident data and by whom, sources of technical data.) Tuesdays from 6:15 to 8 p.m. William J. Niederauer, instructor.

Technical Aspects of Accident Prevention. (Heat, electricity, sound, gases, plastics, demolition, excavation, steel erection, construction, application of basic science to accident prevention.) Wednesdays from 6:15 to 8 p.m. Daniel C. Rhodes, instructor.

Accident Prevention for Motor Vehicle Fleets: Organizing the Pro-

gram. (Need for planned program, reporting, analysis, inspection, securing and maintaining interest.) Wednesdays from 8:10 to 9:55 p.m. John J. Moran, instructor.

Fire Prevention and Protection Inspection. (Nature of an inspection, qualifications of inspectors, chemistry and physics of combustion, phenomena producing fire, flammable liquids, gases, dusts, extinguishment systems, analysis of an industrial establishment.) Thursdays from 6:15 to 8 p.m. Pierre R. Vallet, instructor.

Effective Speaking in Accident Prevention. (Preparation of speech, content of speech, plans and blueprints of safety speech, bad speech habits and their removal, how to give the speech, how to conduct meetings and panels, speeches, class reactions and suggestions by instructor.) Thursdays from 8:10 to 9:55 p.m. H. P. Fellows instructor.

These courses require tuition. Contact Center for Safety Education, New York University, 6 Washington Square North, Room 42, New York 3, N. Y.

"Helmet" Hats

— From page 66

for adequate underground protection than any other type of hard hat on the market today. The football helmet protects the forehead and temples, ears, cheeks, and base of skull. Even without a chin strap the helmet's sides lightly hugging the cheeks would add necessary stability that would keep the hat on even in falling. This type of hat wouldn't be knocked off easily by flying objects or bumping into things.

A football-helmet-shaped hard hat also appears to be ideally shaped for built-in ear-defending devices.

On the negative side, worker acceptance, ventilation, and weight enter the picture. These problems would surely be overcome in time.

We've discussed this safer hard hat idea with safety personnel at the National Safety Congress for the past five years. Generally, they feel some manufacturer should do research on a new, safer hard hat. To date, we've been unable to get any tangible evidence of interest either from other safety personnel or manufacturers.

for DISTINGUISHED SERVICE

Winners of National Safety Council awards for outstanding records

FOUR TYPES of awards are given by the National Safety Council to members for outstanding achievement in accident prevention.

1. Award of Honor

Available to (a) units which complete 3,000,000 man-hours without a disabling injury, and (b) units whose records, though not perfect, meet exacting standards. These standards take into account the previous experience of the unit as well as the experience of the industry in which it operates. A unit must qualify on both frequency and severity rates.

2. Award of Merit

Has similar but less exacting requirements. Minimum number of man-hours is 1,000,000.

3. Certificate of Commendation

For injury-free records covering one or more calendar years and totaling 200,000 to 1,000,000 man-hours.

4. President's Letter

For injury-free records covering one or more calendar years and totaling less than 200,000 man-hours.

Details of eligibility requirements may be obtained by writing to Statistics Division, National Safety Council.

AWARD OF HONOR

American Airlines Inc., Overhaul Base.

American-Standard, San Pablo Plant, San Pablo, Calif.

Belden Mfg. Co., Chicago Plant, Chicago, Ill.

Bethlehem Steel Co. (10): Lackawanna Plant; Buffalo Tank Div., Fairfield Plant, Baltimore, Md.; South San Francisco Works, South San Francisco, Calif.; Chicago Works, Chicago, Ill.; Johnstown Plant, Johnstown, Pa.; Lackawanna Plant, Buffalo, N.Y.; Buffalo Tank Corp., Dunellen Plant, Dunellen, N.J.; Williamsport Plant, Williamsport, Pa.; Johnstown Works, Johnstown, Pa.; Sparrows Point Plant, Sparrows Point, Md.

Brunei Shell Petroleum Co., Ltd., Seria, State of Brunei, Borneo.

Canada Cement Co., Ltd., Hull, Quebec, Canada.

Canadian Johns Manville Co., Ltd., Jeffrey Mine, Asbestos, Quebec, Canada.

City of St. Petersburg, Fla.

Coats and Clark Inc., Toccoa, Ga.

Consolidated Paper Corp., Ltd., Port Alfred Div., Port Alfred, Que., Canada.

Corps of Engineers, miscellaneous operations, Washington, D.C.

Delta Air Lines, ground personnel, Atlanta, Ga.

Demerara Bauxite Co., Ltd., British Guiana, S.A.

E. I. du Pont de Nemours & Co., Wilmington, Del.

Ford Motor Co. (11): Dallas Assembly Plt., Dallas, Tex.; International Div., Dearborn, Mich.; Metal Stamping, General Office, Dearborn, Mich.; Div. Staff Services, Dearborn, Mich.; Nashville Glass Plant, Nashville, Tenn.; Frame Plant, Dearborn, Mich.; Sterling Plant, Sterling Township, Mich.; General Offices, Rawsonville, Mich.; Sandusky Plant, Sandusky, Ohio; Metuchen Plant, Metuchen, N.J.; Highland Park Trim Plant, Automobile Assembly Div.

General Electric Co. (2): Industry Control Dept., Salem, Va.; Household Refrigerator Dept., Appliance Park, Louisville, Ky.

Hughes El Segundo, Hughes Air-

Allis-Chalmers' Safety Wins Two Awards

For the fifth consecutive year, Allis-Chalmers Manufacturing Co., Milwaukee, Wis., received a National Safety Council Public Interest Award. It was the only Wisconsin firm to receive the award this year.

The firm also received an NSC Award of Merit on a company-wide basis. Presentation of these awards was made by Dr. B. L. Corbett, executive director of the Milwaukee Safety Commission, during a radio station WTMJ broadcast.

The Award of Merit was the second such award the firm has received on a company-wide basis.

Allis-Chalmers employs 32,000 persons in the United States and Canada.

In the dugout before a Milwaukee Braves' home game, Allis Chalmers' director of public relations K. W. Haagensen accepts a National Safety Council Public Interest Award from Dr. B. L. Corbett, executive director of the Milwaukee Safety Commission. W. J. McGowan (right), director of industrial and community relations, accepted an NSC Award of Merit at the same ceremony. Occasion for the presentations was a pregame program sponsored by the company. Blaine Walsh (mike) interviewed the men.

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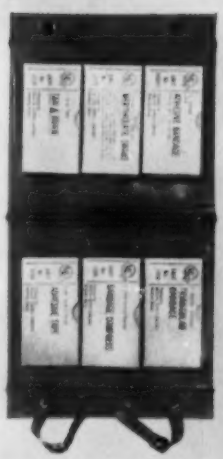
visor first aid kit at your fingertips

NOT in the glove compartment...

NOT under luggage...NOT under the car seat

BUT WHERE YOU SEE IT... WHEN YOU NEED IT...

To make first aid materials immediately accessible to drivers in case of emergency, equip your company's truck and car fleets with this new, highly practical No. 730 MSco visor first aid kit. Ideal, too, for special employee awards in your safety contests. Can be imprinted with your company name or other special insignia if desired. Ask your MSco distributor, or write for details.



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- Curad adhesive compress with Telfa
- Antiseptic swabs
- First aid for burns
- Triangular bandage
- Adhesive tape

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ADJUSTABLE

Fits all car and truck windshield visors

PAT. PEND.

exclusive with MSCO

Specialists in first aid

Medical Supply Company

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CIRCLE 31 ON READER CARD

This marks the first time polycarbonate–combining the impact strength of metal and the natural resilience of plastic–has ever been incorporated into the manufacture of a safety hat.

From the pilot plant stage, MSA's head protection engineers worked closely with the manufacturer of polycarbonate. Thus, as soon as polycarbonate was available in production quantities, MSA was ready with a new polycarbonate line of head protection: The M-S-A TOPGARD.

Your MSA sales engineer would welcome an opportunity to demonstrate the many advantages of the new M-S-A TOPGARD.

MSA **MINE SAFETY APPLIANCES COMPANY**

Pittsburgh 8, Pennsylvania

MSA backs up its label with selection, quality, research, experience

An entirely new line of safety hats and caps– **M-S-A® TOPGARD®**–is available now in a remarkable new material.

It is injection molded from one of the exotic new high-impact engineering thermoplastics: polycarbonate.

← CIRCLE 32 ON READER CARD

craft Co., Los Angeles, Calif.

Humble Oil & Refining Co., Humble Div., Exploration Dept.

The Kendall Co., Textile Div., Upper Plant, Pelzer, S.C.

Kentucky and Indiana Terminal Railroad Co.

Kentucky Utilities Co., Lexington, Ky.

Kingsport Press Inc., Kingsport, Tenn.

Lago Oil and Transport Co., Ltd., Aruba, Netherlands Antilles.

Lever Brothers Co., Edgewater Plant, Edgewater, N.J.

Lockheed Missiles and Space Div., Satellite Systems, Sunnyvale, Calif.

Martin Co., Denver Div., Denver, Colo.

Martin Co., Denver, Colo.

Missouri State Highway Comm., District 8, Springfield, Mo.

Mohasco Industries Inc., Greenville Mill, Greenville, Miss.

Morrison Knudsen Co., Inc. (2): District 5, Dam Div., Boise, Idaho; Lowry Air Force Base Missile Facilities, Denver, Colo.

National Biscuit Co., Holland Rusk Bakery, Holland, Mich.

National Lead Co. of Ohio, Feed Materials Prod. Center, Fernald Area, AEC.

North American Aviation, Inc., Columbus Div., Columbus, Ohio.

Olin Mathieson Chem. Corp., Packing Div., Flooring Plt., Shreveport, La.

Owens-Illinois Glass Co. (2): Mfg. Glass 17, Clarion, Pa.; Mfg. Glass 12, Gas City, Ind.

Owens-Illinois Paper Products Div., Miami Plant, Hialeah, Fla.

Pittsburgh Plate Glass Co. (4): Works 1, Creighton, Pa.; Mfg. Cement, Zanesville, Ohio; Glass Div., Works 7, Cumberland, Md.; Ditzler Color Div., Detroit, Mich.

Potlatch Forest's Inc., Southern Plant, Bradley-Southern Div., Warren, Ark.

Price Brothers & Co., Ltd., Riverbend, Quebec, Canada.

H. C. Price Co., Spread 1, Lawrenceburg, Tenn.

Radio Corp. of America (4): RCA Victrola Div., Cambridge, Ohio; RCA Victor Telev. Div., Bloomington, Ind.; Moorsetown Engineering Plant, Moorestown, N.J.; Service Co., Consumer Prod. Serv., Central Reg., Chicago, Ill.

Raytheon Co. (2): Airborne Operation, Maynard and Sudbury, Mass.; Missile and Space Div., Bedford Research and Development Center, Bedford, Mass.

Republic Steel Corp., Truscon Steel Div., Youngstown, Ohio.

Sperry Microwave Elect. Co., Sperry Rand Corp., Clearwater, Fla.

J. P. Stevens and Co., Inc., Victor Plant, Greer, S.C.

Texaco Inc., Refining Department, West Tulsa Plant.

United States Steel Corp. (3): Columbia-Geneva Steel Div., Geneva Works, Provo, Utah; Michigan Limestone Calcite Plt., Rogers City, Mich.; Frick District, Uniontown, Pa.

Western Electric Co., Inc., North Carolina Works, Burlington, N.C.

Weyerhaeuser Co. (2): Tacoma Office, Tacoma, Wash.; Lumber and Plywood Div., Marketing, Tacoma, Wash.

"Take out those ear plugs, Otis. You're not in that noisy boiler plant now!"

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This marks the first time polycarbonate–combining the impact strength of metal and the natural resilience of plastic–has ever been incorporated into the manufacture of a safety hat.

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Kentucky and Indiana Terminal Railroad Co.

Kentucky Utilities Co., Lexington, Ky.

Kingsport Press Inc., Kingsport, Tenn.

Lago Oil and Transport Co., Ltd., Aruba, Netherlands Antilles.

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Lockheed Missiles and Space Div., Satellite Systems, Sunnyvale, Calif.

Martin Co., Denver Div., Denver, Colo.

Martin Co., Denver, Colo.

Missouri State Highway Comm., District 8, Springfield, Mo.

Mohasco Industries Inc., Greenville Mill, Greenville, Miss.

Morrison Knudsen Co., Inc. (2): District 5, Dam Div., Boise, Idaho; Lowry Air Force Base Missile Facilities, Denver, Colo.

National Biscuit Co., Holland Rusk Bakery, Holland, Mich.

National Lead Co. of Ohio, Feed Materials Prod. Center, Fernald Area, AEC.

North American Aviation, Inc., Columbus Div., Columbus, Ohio.

Olin Mathieson Chem. Corp., Packing Div., Flooring Plt., Shreveport, La.

Owens-Illinois Glass Co. (2): Mfg. Glass 17, Clarion, Pa.; Mfg. Glass 12, Gas City, Ind.

Owens-Illinois Paper Products Div., Miami Plant, Hialeah, Fla.

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Western Electric Co., Inc., North Carolina Works, Burlington, N.C.

Weyerhaeuser Co. (2): Tacoma Office, Tacoma, Wash.; Lumber and Plywood Div., Marketing, Tacoma, Wash.

"Take out those ear plugs, Otis. You're not in that noisy boiler plant now!"

Electricity

– From page 29

Second, connecting the frame of the device to ground assures that regardless of what kind of defect occurs the voltage of the frame will be held sufficiently low so as not to become hazardous. It should be understood by all that the ground wire does not affect the normal operation of the device and that its sole purpose is to provide safety in case a defect occurs. It is very important that this concept is fully understood, especially by "do it yourselfers."

In appliances and hand tools the ground wire is the green wire of the three-wire extension cord. Thus, it is mandatory that the conductivity and usefulness of the ground wire receive the highest priority.

Practical Thresholds

Many persons have a fear of electric shock from instinct, experience, or education. Moreover, this fear is often surrounded by mystery and lack of knowledge. Perhaps part of this confusion might be dispelled by defining, even if only approximately, the limiting quantitative values of the various electrical quantities controlling the danger of electric shock.

Lethal shock hazard: Those ac and dc circuits capable of passing through a 500-ohm resistor an uninterrupted alternating current in excess of 100 milliamperes, an uninterrupted direct current in excess of 500 milliamperes, or an impulse discharge in excess of 50 joules;* for complex output wave forms, such as dc power supply, a total of 50 or more joules through a 500 ohm resistor for one second.

Shock hazard: Those ac and dc circuits capable of passing through a 500-ohm resistor an uninterrupted alternating current in excess of 9 milliamperes, an uninterrupted direct current in excess of 60 milliamperes, or an impulse discharge in excess of ¼-joule.

Negligible shock hazard: Shocks of an intensity less than those producing "shock hazard" defined above, or equipment and circuits operating at 25 volts or less.

The present high level of electrical safety is due in large measure to the many persons who are devoting their lives to its various aspects. This effort has resulted in the formation of safety codes, the general conformity with safety measures, and the safety principles discussed in the foregoing. However, humans do make mistakes, all mechanisms are subject to failure, and it is for this reason that all users of electrical equipment and appliances must automatically adopt safe work habits and be on a constant lookout for potentially dangerous conditions. Today we live electrically. A vital step in living safely electrically is to purchase only home appliances and electric portables that carry the familiar "UL" stamp of approval, the official symbol of the Underwriters' Laboratories.

In case of an electric shock accident, the victim must be freed *promptly* from contact with the circuit. The circuit should be killed immediately by removing the extension cord from its convenience outlet, or by opening the switch. In case of doubt about which switch to open, all should be opened. If the victim is still receiving a shock, a dry stick, dry rope, dry clothing, or any nonconductor can be used to separate the victim from the energized conductor. Either the conductor or the victim can be moved. This must be done *promptly* and *safely*. No part of the victim's body should be touched with unprotected hands as long as he is electrified.

While dry shoes, rubber overshoes, or dry newspapers provide protection against 120- or 240-volt residence or industrial utilization circuits, such insulations are inadequate for higher voltages such as those used for primary or distribution circuits and high-voltage power lines. Traffic accidents in which energized high voltage wires are knocked down are so frequent that the public should be told how to minimize the hazard. If a high voltage wire comes to rest on an automobile, the occupants should be warned to remain inside. They are safe from electric shock as long as they do not contact the pavement. Would-be rescuers and onlookers should not come close to either the energized automobile or to any of

*One joule is equivalent to the work that would be required to maintain a current of one ampere flowing through a resistance of one ohm for one second. Equals one watt-second.

GOODYEAR

How to step with safety on the FOOTPRINT OF DANGER!

Unexpected oil drippings, steel chips and other factory debris make every step potentially dangerous. Under such unanticipated situations there's one best way to assure maximum safety: wear shoes with Chemigum *Oil Proof* Soles.

Here's the proof. Chemigum will not absorb oil. It will not swell or soften. In fact, by every technical test—and in actual use, as well—Chemigum has proved to be far superior in oil-resistant qualities to other ordinary soling materials used on safety shoes. In addition, Chemigum *Oil Proof* Soles have an "engineered tread" that really grips and prevents slips.

Safety comes first, of course, with Chemigum *Oil Proof* Soles. But you'll also appreciate these added features: Chemigum *Oil Proof* Soles are lighter in weight than other brands of soling material designed for most other safety shoes. They have remarkable resistance to picking up steel shavings and chips. They have a new handsome amber color . . . and they're non-marking.

The *extra* safety, *extra* wear and *extra* comfort you get from these remarkable soles make Chemigum today's best value . . . when you buy safety shoes specify Chemigum *Oil Proof* Soles.

CHEMIGUM Heels are made of the same sensational oil proof material as Chemigum Soles.

CHEMIGUM OIL PROOF SOLES

MR. NEOLITE SAYS:
LOTS OF GOOD THINGS COME FROM GOODYEAR

NEOLITE AND CHEMIGUM, T. M.'S—THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

CIRCLE 35 ON READER CARD

the high voltage wires on the ground.

Usually, the layman will not know the voltage of the circuit. However, the distances given in Table I constitute a warning, as they are the minimum safe distances in air from an energized bare wire. If the wire is resting on the ground, it must not be approached closer than the place from where it is first noticed, and certainly not closer than 25 ft.

In some cases an arcing or sputtering wire may suddenly appear to become dead, but it may yet be potentially hazardous. In other cases, the high voltage wire may appear perfectly harmless but it may be energized at a very dangerous voltage. Many circuits are re-energized once or several times by an automatic recloser, and therefore all high voltage wires must be regarded as alive.

In such accidents, the rescuer should limit his efforts to obtaining a policeman, notifying the power utility of the nature and location of the accident, and keeping the public at a safe distance until the utility service man arrives at the scene of the accident and states that it is safe to proceed with rescue efforts.

Except for possibly causing a painful fall or its nuisance value, the smallest shock current of importance is that current which causes loss of voluntary control of the hand when grasping an electric object. The muscular contractions and sensations of heat increase as the current is increased. Sensations of pain develop, and voluntary control of the muscles that lie in the current pathway becomes increasingly difficult. Finally, a value of current is reached for which the victim cannot release his grasp of the conductor. The maximum current a person can tolerate while holding an electrode in the hand and still let go of the energized conductor by using muscles directly stimulated by that current is called the "let-go current." Let-go currents are important. Experience has shown that an individual can withstand, with no ill after-effects, his let-go current for at least the time required to release the conductor. Currents in excess of one's let-go current are said to "freeze" him to the circuit. Such currents are very painful, frightening, and hard to endure for even a short time. Failure to interrupt the current promptly is accompanied by a rapid decrease in muscular strength due to the pain and fatigue associated with the accompanying severe involuntary muscular contractions. Thus it would be expected that the let-go ability would decrease rapidly with duration of contact. Prolonged exposure to currents only slightly in excess of a person's let-go limit may produce exhaustion, asphyxia, and unconsciousness, followed by death.

Figure 1 shows experimental data obtained on both men and women, using suitably controlled 60-cycle commercial alternating current. It should be noted that the data follow closely a straight line on the semi-logarithmic graph paper, which indicates that the effects of electric shock may be analyzed by using statistical procedures. Many tests were made on volunteer male subjects and curves similar to that in Figure 1 were prepared. In these tests sine-wave alternating currents of frequencies from 5 to 10,000 cycles were used. The composite results are portrayed in Figure 2. The lowest curve represents the let-go current for 99½ per cent of the group of men, and is generally regarded as the highest uninterrupted alternating current reasonably safe for all men. As noted in the caption, the values for women are approximately 66 per cent of the corresponding values for men.

The most dangerous effect of electric shock is a derangement of heart action known as ventricular fibrillation. In the fibrillation condition the pumping action of the heart stops, and death is likely in about five minutes. Unfortunately, such cases do not respond to resuscitation, and the skill and equipment needed to apply the only known remedy, a controlled counter-electric shock, is not yet available for use in the field. Establishing the minimum electric current likely to produce ventricular fibrillation in man is important, as no man should knowingly be subject to shocks of this magnitude. Such knowledge is gradually being incorporated in improved designs of an increasing number of electrical

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machines, installations, and protection systems.

It is obvious that shocks likely to produce ventricular fibrillation cannot be performed on man, and the only recourse is to project results obtained from animal experimentation to man. Experiments have been made using both small animals and animals comparable in both body weight and heart weight to man.

One series of tests was conducted on sheep to determine the effect of different current pathways on the minimum current needed to produce ventricular fibrillation. For example, 60-cycle shocks of three seconds' duration were applied from the right foreleg to the left hindleg, between the head and the left hindleg, left foreleg and the right side of the chest, right and left sides of the chest, right and left forelegs, and between the right and left hindlegs. The difference in the average values for the first four current pathways did not appear great enough to be significant. However, the pathway between the forelegs indicated a slightly higher threshold, and for the current pathway between the hindlegs, the portion of the current reaching the heart was evidently too small to produce ventricular fibrillation detectable by the apparatus. In human accidents, the current pathway through the body is often between major extremities, such as between the hands, one hand to the feet, or the head to the feet. It is quite generally believed that the results obtained on animals using electrodes applied to the foreleg and opposite hindleg should be satisfactory for projection to man. For purposes of analyzing human accidents it is common practice to assume 500 ohms as the internal resistance of the body between major extremities.

Unfortunately, quantitative information regarding electric shock intensities necessary to cause other serious effects remains largely unknown. For example, the minimum current required to produce unconsciousness lies somewhere between the let-go and fibrillating thresholds. Currents passing through the chest or vital nerve centers may produce paralysis of the breathing mechanism, an effect called respiratory inhibition. Much higher currents, such as those used in electrocution of criminals, may raise the body temperature sufficiently to cause immediate death. Currents sufficient to blow fuses and trip circuit breakers often create awesome destruction of tissue, and may produce very severe shock and irreparable damage to the nervous system.

Although the deleterious effects of electric shock are due to the current actually flowing through the human body, in accidents the voltage of the circuit is usually the only electrical quantity known with certainty. Current and voltage are related by Ohm's law, but the great variations in skin and contact resistances are so unpredictable that let-go voltages are relatively meaningless. On very high voltage circuits, the skin and contact resistances break down instantly, and thus they play only a minor role in limiting the current received by a victim. However, on lower voltages the resistances at contact locations become of increasing importance, and these resistances are of paramount importance on very low voltage circuits. Obviously, wet contacts create a most dangerous condition for receiving electric shock, and it is for this reason that no one must ever use electrically powered appliances or equipment in wet locations without first taking precautionary measures such as wearing

TABLE I

Safe Distances From Live Circuits in Air

Do not approach live conductors closer than the following distances:

751	to	3,500 V.	1 ft.
3,501	to	10,000 V.	2 ft.
10,001	to	50,000 V.	3 ft.
50,001	to	100,000 V.	5 ft.
100,001	to	250,000 V.	10 ft.

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dry gloves, standing on dry boards, or using rubber overshoes.

Burns suffered in electrical accidents are of great concern. These burns may be of two types, electric burns and thermal burns. Electric burns are the result of electric current flowing through the tissues. Typically, electric burns are slow to heal, but they seldom become infected. Thermal burns, on the other hand, are the result of high temperatures in close proximity to the body, such as those produced by an electric arc, vaporized metals, or hot gases released by the arc, or by overheated conductors caused by short circuits. These burns are similar to burns and blisters produced by any high temperature source. Currents of the let-go level, if they flow for an appreciable time, are more than sufficient to produce deep burns, and both types of burns may be produced simultaneously. Any serious burn should receive prompt medical attention.

No discussion of electric shock would be complete without mention of the necessity for resuscitation of victims of serious electric shock accidents. In many cases, the victim may remain in contact with the circuit either because of his inability to let go of the energized conductor, or due to unconsciousness. A rescuer should immediately remove the victim from the circuit, and apply an approved method of artificial respiration if the victim is not breathing or he appears not to be breathing. An assistant should be sent for medical assistance and a mechanical resuscitator. Resuscitation should be continued without interruption until the victim revives, until rigor mortis sets in, or until the case is pronounced hopeless by a physician.

Approved methods of resuscitation have received universal ac-

TABLE II

Quantitative Effects of Electric Current on Man

	Milliamperes					
	Direct Current		Alternating Current			
			60-cycle		10,000 cycles	
Effect	Men	Women	Men	Women	Men	Women
Slight sensation on hand	1	0.6	0.4	0.3	7	5
Perception threshold	5.2	3.5	1.1	0.7	12	8
Shock — not painful and muscular control not lost	9	6	1.8	1.2	17	11
Painful shock — painful but muscular control not lost	62	41	9	6	55	37
Painful shock — let-go threshold	76	51	16	10.5	75	50
Painful and severe shock — muscular contractions, breathing difficult	90	60	23	15	94	63
Possible ventricular fibrillation effect						
3-second shocks	500	500	100	100		
Short shocks (T in seconds)			$165/\sqrt{T}$	$165/\sqrt{T}$		
High voltage surges	50*	50*	13.6*	13.6*		

(*energy in watt-seconds or joules)

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ceptance because of successful field experience. Success is contingent upon promptness in starting resuscitation efforts, and in obtaining an unobstructed air passage to the lungs. The mouth-to-mouth method is best because the rescuer can feel that his air actually inflates the lungs of the victim, and is the best method for use on small children. In electrical accidents where an unconscious victim may froth or foam at the mouth, alternate approved methods are the Holger-Neilsen arm-lift back-pressure method and the pole-top method. The latter is suitable for victims on power poles or where the victim cannot be placed in a horizontal position. Many victims of serious electric shock accidents recover, perhaps after a considerable period of convalescence, but with no serious permanent aftereffects.

Figure 3 illustrates in graphical form the freezing hazard and the hazard from ventricular fibrillation. The lowest line of each hazard represents the theoretical response of ½ per cent of an infinite group, whereas the upper line represents the response of 50 per cent of the group. There should be little argument that currents in excess of the 50 per cent line must be considered very dangerous.

Studies of fatalities in France by engineers of Electricité de France have shown that 30 per cent of the electrocutions involving utilization circuits are due to contact between an ungrounded wire or improperly grounded frame, while the rest (or 70 per cent) are due to contact between two wires of the circuit or defective appliances or small equipment. Fortunately, the recent advances in semiconductor techniques have made possible the development of a new device called the differential current circuit breaker. This is a special circuit breaker having an additional trip element sufficiently sensitive and fast enough to protect against electrocution due to accidental line-to-ground contacts. An application for a U.S. patent is now pending, and it is anticipated that the differential current circuit breaker will be available shortly for both residences and industry.

A summary of the deleterious effects of electric shock are given below in both the narrative and in the quantitative terms:

Summary of the Lethal Effects

1. If long continued, currents which "freeze" one to an energized conductor may produce collapse, unconsciousness, and death.

2. Currents flowing through the chest, the head, or nerve centers controlling breathing may produce respiratory inhibition. Respiratory inhibition is dangerous because paralysis of the respiratory organs may last for a considerable period even after interruption of the current, and an approved method of artificial resuscitation *must* be applied *promptly* to prevent suffocation.

3. Ventricular fibrillation is caused by moderately small currents which produce derangement of the heart action rather than physical damage to that vital organ. When fibrillation occurs the rhythmic pumping action of the heart ceases and death usually follows in a few minutes.

4. Heart standstill may be caused by relatively high currents.

5. Relatively high currents may produce fatal damage to the central nervous system.

6. Relatively high current may produce deep burns, and currents sufficient to materially raise body temperature produce immediate death.

7. Victims who have been revived sometimes die suddenly for no apparent reason. This is thought to be due to: aggravation of pre-existing conditions; hemorrhages affecting vital centers; or the effects of shock to the system. Delayed death may also be due to burns or other complications.

Data Sheet Details Hydrocyanic Acid Handling

Hydrocyanic acid, its properties, and recommended safe handling and use practices, are described in a recent chemical safety data sheet available from the Manufacturing Chemists' Association, Inc., 1825 Connecticut Ave. N.W., Washington, D.C. for 30¢ each.

The pamphlet, *SD-67 (revised)*, details engineering control of health, fire, and explosion hazards of the acid and discusses employee safety education and training and personal protective equipment recommended while handling it.

This revised edition of *SD-67* contains detailed information of valves and piping for use in HCN service; on storage, including transfer of HCN from tank car to storage tank; and on emergency procedures.

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the right equipment . . .
can ferret out
noise problems

Sound Sleuths

BACKED by scientific equipment, acoustical engineers often can make productive working environments from inefficient bedlam.

These engineers — armed with mechanical aids — frequently go into industrial areas to check up on sound. Such specialists also may use mock-up rooms and demountable materials for on-the-spot demonstrations of recommended acoustical corrections.

Consulting firms in this field usually depend on sound-measuring instruments to determine noise levels and frequency characteristics. This apparatus pinpoints sound levels in a room and establishes attenuation values for various types of acoustical application.

One of these devices is portable, with a self-contained power supply and combining functions of a sound level meter, octave band analyzer, and narrow band analyzer. A removable goose-neck microphone adds flexibility.

A recent problem involved sound transmission from compressor and machine rooms to offices on other floors of the Blue Cross Building in Los Angeles. Engineers used sound-sensing apparatus on various floor levels with the microphone up against partitions and floors, simulating a so-called sniffer mike.

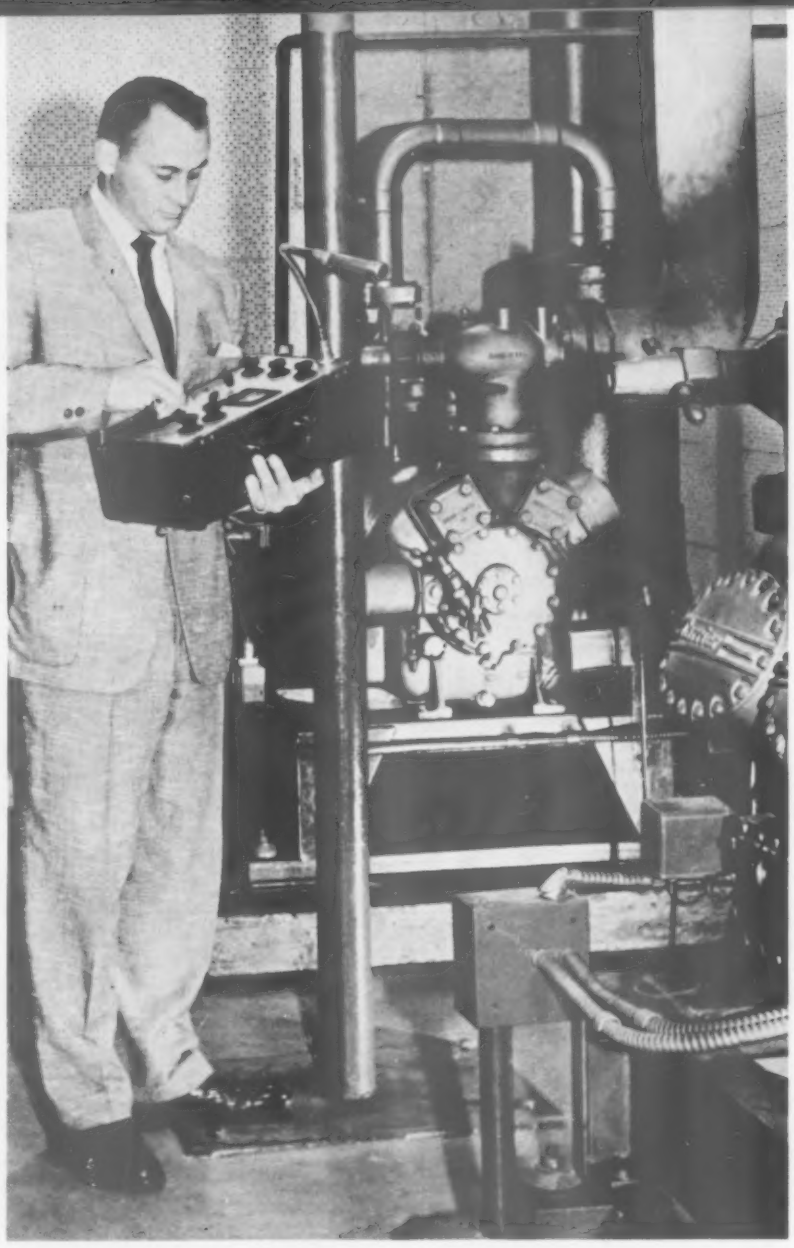
Instrumentation determined what frequency components were required for the machine isolators and confirmed recommendations for treatment. Acoustical installations lowered the sound level from 110 db to 82-88 db.

In the 13-story Texaco building in the same city, measurements found attenuation values of certain types of demountable partitions. Tests in the 100 to 800-cycle range were made with the sound source in one room and acoustical measuring instruments in another. Results proved performance of ceilings and partitions exceeded requirements.

Collection of sound level and frequency data also has reduced disturbance of training classes by sound transmission through partitions and ceilings in the Pacific Telephone & Telegraph Company's building in Los Angeles. Classes now are held in relative isolation from noise in adjoining rooms.

In another 13-story structure, the Tidewater Oil Company building in this city, sound-measuring instruments made ceiling and partition attenuation checks. Apparatus also gathered data for determining isolation of equipment and compressors in machine rooms. Information proved the correct selection of acoustical treatment.

After occupancy of the building, the employees' cafeteria was moved to a new location. Inspection of sound conditions confirmed need for this decision.



An engineer of the Harold E. Shugart Co., Inc. checks the noise level in the compressor room of the Blue Cross Building in Los Angeles, Calif. (Photo — Mine Safety Appliances Co.)

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Reviews of books, pamphlets and periodical articles of interest to safety men

By LOIS ZEARING, Librarian, NSC

Health Congress Proceedings Published

Proceedings: Thirteenth International Congress on Occupational Health. Publisher, Irving R. Tabershaw, 375 Park Ave., New York 22. 1,005 pp. $10.

THE RECORD of this important meeting, held in New York City in July, 1960, contains papers representing three years of research. The book measures the growth of industrial medicine and related subjects.

Almost 300 papers were presented during the 35 sessions of the Congress. The editors felt it would be confusing to group the papers by session, and have arranged them under these categories:

Administrative practices, surgical practices, medical practices, education and training, environmental hygiene, social and legal aspects, influence of environmental aspects on health, maximum allowable concentrations, and work physiology and psychology.

Although these are the proceedings of a medical meeting, there are many discussions of interest to men in the accident prevention field. On- and off-the-job accident and health problems are thoroughly discussed and recorded by international authorities.

ROY G. BENSON

Manual Has International Flavor

Accident Prevention—A Workers Education Manual. International Labor Office, Geneva, Switzerland, 1961, 173pp. 48 illustrations 75c.

THIS IS a useful book on the fundamentals of accident prevention with a strong international flavor. There are 14 chapters of lessons, with questions at the end of each lesson.

The second lesson covers the early history of accident prevention starting with the industrial revolution in Great Britain. It is interesting to note that early efforts to protect workers were directed toward reducing the hours and protecting the health of the children.

There are many accounts of children, six to eight years of age, working in a standing position for 16 to 17 hours each day in the cotton, wool and silk industries in France.

Lesson No. 2 also points out that Massachusetts was the first state in the United States to pass an act for the prevention of accidents in factories.

Other lessons cover the problem of accidents during work, accident investigations and statistics, some principles of accident prevention, some practical applications of accident prevention principles, psychological and physiological aspects of accident prevention, and safety activities in the undertaking.

This publication should be in the library of every safety man. The chapter on the early history of accident prevention alone merits such a recommendation.

L. C. SMITH

Reviving the Unconscious Victim

Resuscitation of the Unconscious Victim. A Manual for Rescue Breathing, Second Edition. By Peter Safar, M.D., and Martin C. McMahon. Charles C. Thomas, publisher, 301-327 East Lawrence Ave., Springfield, Ill. 79pp. $2.

THIS IS the second edition of a manual on resuscitation written primarily for those actively concerned with the application and teaching of first aid. It also affords interesting and valuable information for those interested in this subject who don't teach it.

The booklet is divided into sections. Section No. 1 gives an explanation of asphyxia, how unconsciousness alone may kill by air passageway obstruction, recognition of asphyxia and who requires resuscitation, and mouth-to-mouth versus manual methods of artificial respiration.

Section No. 2 gives instructions on how to resuscitate an unconscious person.

Section No. 3 tells how to use artificial respiration with intermittent positive pressure breathing. (IPPB) These chapters explain exhaled air methods, atmospheric air methods, and oxygen methods.

Section No. 4 under the heading of miscellaneous deals with oxygen inhalation, drowning, chest and multiple injuries, new-born resuscitation, cardiac resuscitation, transportation of unconscious persons, infection, teaching of artificial respiration, teaching aids, and conclusions.

The booklet also contains a tear-out sheet covering closed-chest heart massage.

The authors hope the manual will aid in the understanding of asphyxia and that technical details described will be of practical value in future application and teaching of resuscitation.

C. H. HOCH

BOOKS AND PAMPHLETS

Aeronautics

Impact Survival in Air Transport Accidents. Gerard M. Bruggink. January 1961. 54pp. Aviation Crash Injury Research, Division of Flight Safety Foundation, 2871 Sky Harbor Blvd., Phoenix, Ariz. $1.

Chemicals

The Handling and Storage of Liquid Propellants. 1961. 248pp. Supt. of Documents, Washington 25, D.C. $1.25.

Canning Industry

Injuries and Accident Causes in the Canning of Fruits and Vegetables. 1961. 49pp. U.S. Dept. of Labor, Bureau of Labor Statistics, Washington 25, D.C. (BLS Report No. 183)

Fertilizer

Fertilizer Safety Guide. 1961. 52pp. National Plant Food Institute, 1700 K St. N. W., Washington 6, D.C.

Fire Protection

Flammable Materials: A Lecture

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SAFETY WISE*

*The National Safety Council's new training film series for workers in all industry.

In the final analysis, a good safety program depends on the thoughts and actions of each employee.. If each makes use of the safety he is taught . . . if each believes in and supports the safety program . . . if each regards safety as a personal responsibility . . . then the safety program will be a success.

This new film series was written and produced with the individual employee in mind. Each of the three films discusses his individual responsibility for safety, his role in accident prevention, his stake in the safety program. If you're looking for a training tool that will reach your people with convincing arguments for a more personal interest in safety — then this new 3 film series, SAFETY WISE, is for you!

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1 171.76 — SAFE AS YOU KNOW HOW

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2 171.77 — NOT EVEN ONE CHANCE

In this film the audience meets J. T. O. (Just This Once) Jones. He's the fellow who takes chances and often gets into danger and trouble. The film plays heavily on the danger of this attitude and why it's important to change it. At the end of the film J. T. O. decides to change his motto to N. E. O. (Not Even Once).

3 171.78 — HELP YOURSELF TO SAFETY

A pointed training film about George Griswold. He's the fellow that has a head full of safety facts but nevertheless still has an accident. This is an excellent film in overcoming the personal "blind spots" employees develop about their own relation to the overall safety plan.

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Hospitals

Occupancy Fire Record—Hospitals. 1961. 24pp. National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass. (Fire Record Bulletin FR61-1) 50¢.

Mines

Estimated Costs of Gasifying Coal in Place: A Study Based on Electrolinking and Hydraulic Fracturing Experiments of the Bureau of Mines. 1961. 12pp. Publications Distribution Section, U.S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (Information Circular 8020) Free.

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Injury Experience in Coal Mining, 1958. 1961. 67pp. Publications Distribution Section, U.S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (Information Circular 8026)

The National Safety Competition of 1959. 1961. 39pp. Publications Distribution Section, U.S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (Information Circular 8022)

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Preparation of Equipment for Safe Entry and Work. Chapter V, Guide for Inspection of Refinery Equipment. 1961. 15pp. American Petroleum Institute, Div. on Refining, 1271 Ave. of the Americas, New York 20, N.Y. 75¢.

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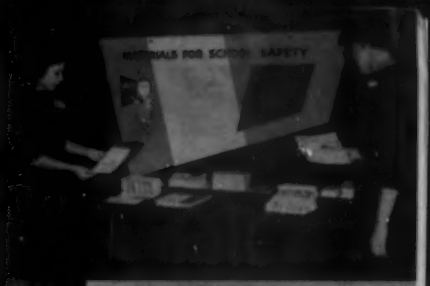

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Hearing Protection

– From page 21

experience with other protective equipment."

e. "Failure of management to follow through once the program is started."

f. "Complete lack of interest in management as other problems are more pressing and need immediate attention since this problem has results or implications which are far in the future."

g. "The usual objections raised at the wearing of any safety equipment."

h. "Foremen and supervisors are discouraged because they think this is a fruitless task."

i. "We lack a nurse or doctor to promote, encourage, and maintain the effort."

j. "The cost of cases is too small now to get excited about the problem."

k. "It is easy to get initial interest which dies down shortly, and this is very hard to arouse again."

l. "The program was given a very poor introduction, which fell flat."

m. "No single person has been assigned responsibility of seeing that the program is made to work."

n. "The wearing of ear protection would stir up trouble and create claim consciousness."

o. "We don't think our plant is noisy like other plants."

3. What are the major objections to the wearing of ear protectors that you hear first-hand from workers and supervisors?

OBJECTIONS OF WORKERS

a. "Ear plugs hurt and are uncomfortable." — 85 per cent.

b. "Ear plugs are too much bother and get lost."

c. "Fear of placing an object or foreign body in the ear."

d. "Ear plugs are just a nuisance and inconvenient."

e. "We cannot hear the sounds of the machine to check its operation properly."

f. "Ear plugs are an insult to a

worker's manhood; I can take it!"

g. "Ear plugs cause infection, headaches, and make one nervous."

h. "There is too much joking and kidding of the fellows who actually wear muffs."

i. "There are no real complaints or objections once management decides it is good for the employee and pushes it in the same way they keep at the other safety efforts which are likely to bog down."

OBJECTIONS OF SUPERVISION AND MANAGEMENT

a. "Ear plugs hurt and are uncomfortable."—85 per cent.

b. "Ear plugs are misplaced or lost."

c. "We have never had adequate promotion or education."

d. "We don't tell the fellows why this is important."

e. "We find the usual objections to ear protectors that are raised at the wearing of any safety equipment."

f. "Ear plugs are too much bother and get lost."

g. "Can't force employees' reaction to ear plugs."

h. "Can't force employees' acceptance of ear plugs or can't make them wear devices."

i. "Other plant problems are much more pressing."

j. "We fight production schedules, taxes, increased costs of all kinds."

k. "This is just another nui-

"Gesundheit!"

sance." (That is, trying to get men to stuff their ears.)

l. "Lack of sustained honest effort to keep at this new form of personal protection."

m. "Our shop is not that noisy."

n. "Nobody is complaining here."

o. "We have no legislation; therefore, why stir up trouble."

I wish I had space to answer these objections, because I think each one can be answered successfully.

4. *What methods, techniques, and gimmicks have you found most successful in promoting ear protection?*

a. "Try a personal demonstration. (Take the employee, his boss, or foreman out to the noisy plant, place the ear plugs in, then pull them out suddenly and notice the difference.)"—65 per cent.

b. "Having the plant nurse or doctor in on the program so they can explain the purpose of hearing protection and fit the employees properly. The programs have almost assured success."—25 per cent.

c. "Utilize a 'wearing time' schedule. A time schedule helps a worker break in his ear plugs.
   1. "30 minutes a.m. and p.m. first day."
   2. "1 hour a.m. and 30 minutes p.m. second day."
   3. "2 hours a.m. and 1 hour p.m. third day."
   4. "All a.m. and 2 hours p.m. fourth day."
   5. "All a.m. and 3 hours p.m. fifth day."
   6. "All day sixth day and thereafter."

d. "Pinpoint exposures and discuss with management. Fit the supervisor or foreman in front of the noisiest machine. On signal have him remove both plugs quickly."

e. "Working with employees in meetings, appealing to their ego by implying they are intelligent people who certainly do not want to lose their hearing upon retirement. Supervision must set an example by wearing plugs themselves."

f. "You must have a choice of hearing devices—a single de-

vice can't be expected to result in successful efforts."

g. "No deafened worker should ever come back to us and remind us that his loss of hearing was our failure and the product of our discouragement."

h. "One man wears them successfully and tells others, possibly at the safety meeting. You can get several men to volunteer wearing different types and have them report at the next meeting."

i. "Mandatory programs are the answer. This is the only way the workmen will ever wear protective devices."

j. "Demonstrate that you can hear people converse with the devices in the ears."

k. "Use the sound and sensible argument that employees will be more comfortable and hearing will be preserved if they wear plugs."

l. "Reasoning with management that someday they will save money by cutting down claims; however, just the idea of saving the hearing of human beings ought to be enough."

m. "Management should let their employees in on what is going on. When they note it is for their own good they will accept it."

n. "Use the employee magazine or newsletter. Show pictures of employees being fitted with ear plugs by doctor and nurse. The employee will take the

"He's ok. I put a pair of my goggles on him."

publication home and read the explanations. Perhaps his wife will see it and encourage him to wear ear protection."

o. "Enforcement. Mandatory programs are the answer. Many employers have found this out after months of fruitless and voluntary attempts."

p. "A meeting of supervisors having the nurse or other qualified person properly fit each supervisor. At the time explain the occupational hazard and control principle. Also explain that each individual must become accustomed to wearing the protective device just as one must become accustomed to wearing eyeglasses. Have each supervisor agree to give the plugs a fair trial, using them for short periods to start and gradually working up to longer periods, until they may be worn for a full shift without discomfort. I find this method not only 'sells' the supervisors on the value of protection but also convinces them that required use by the employee is not unreasonable, especially in the areas of greatest noise. Job description should then require the wearing of protective gear."

q. "Keep at it, keep at it, keep at it. This is the only way and the way we have dealt with other protective equipment."

5. Do you feel that insert-type ear plugs can be worn throughout the working day with negligible discomfort to the user?

This question was answered "yes" by 90 per cent of the nurses and engineers. However, many of the engineers and nurses stated they did not wear them for long periods so perhaps we must qualify this response. It is clear that our servicing engineers and occupational health nurses believe ear plugs can be worn throughout the day with little discomfort.

Many of our respondents said plugs must be fitted properly and some stated that the wearer can't help feeling a little discomfort. This should be recognized and understood as the price one pays for protection.

6. In plants where insert ear plugs are available, have the employees been fitted by one individual who knows how or have the employees been expected to fit themselves?

This question was answered about 50-50. The important thing about the knowledge gained by this question, however, indicates that unless a doctor or nurse is in on the program to counsel employees and do the actual fitting, hearing conservation programs are likely to fail.

It would seem that we should try to get more help from the nurse and doctor. Only the nurse or other well-trained person can do this job properly.

7. If you have had any experience with ear muffs, what is your opinion of the practical value of this type of protection?

There is no question about it, the ear muff is "in." There's a great deal of enthusiasm expressed for using

this type of protection; I was surprised at the number of engineers and nurses who reported success in plants using the muff, as we did not have favorable reports three to five years ago. Here are some of the statements we received:

a. "Ear muffs are very good."

b. "Ear muffs are easy to put on and take off—like goggles."

c. "In one of our biggest policyholder plants, ear muffs are replacing ear plugs."

d. "The employees wouldn't operate a planer without wearing their ear muffs."

e. "Ear muffs are more sanitary, they eliminate the actual fitting problems, and are best for short exposures. The employees won't work without muffs in the riveting department and in grinding."

f. "They are very successful in sawing metal I-beams. Yes, earmuffs are successful. The noisy operation is in one room and protection is mandatory for all operators."

g. "Yes, they are accepted because it is mandatory. Airline operators say they expect each man to come to his job on the ramp with his cap, a clean shirt, and ear muffs. This is the job requirement. It's as easy as that. This same idea could be utilized on almost every job having noxious noise.

h. "Ear muffs are no good in hot weather or inside in paper machine rooms."

i. "They are too tight and press the head uncomfortably."

j. "Management kicked at the cost of muffs at the beginning but later were convinced that they were the solution. Ear muffs are just no good; people laugh at you when you wear them."

k. "Ear muffs are good but the price is up too high."

l. "Too bad the ear muffs have to cost so much. If they were cheaper the problem would be solved." (Editor's note: Muff prices are now down to $12-$15.)

Thus we see personal hearing protection is probably a long-range educational project primarily because the worker is adaptable and quite willingly accepts noise as part of his occupation. If this were not true, we'd have greater acceptance and there would be no problem.

However, the need for hearing protection is with us and cannot be avoided; neither will it go away. We may as well face the fact that it is *not* a simple task, but like other protective equipment nurses and safety engineers promote in their plants despite discouragement, it has an important function—protection of a valuable sensory ability, hearing. Without our constant vigilance and attention the cause is lost. Medicine and surgery cannot help the noise-deafened worker. Our answer: prevention, constantly and effectively applied.

Are successful hearing protection programs possible? Yes, they are, if we believe the preservation of hearing is important, and if we are willing to work at the job.

PERSONALS

News of people in safety and related activities

Former NSC Director Given Top Kiwanis Job

DON E. MUMFORD, former NSC director and past chairman of the Railroad Section, has been assigned chairmanship of the Kiwanis International Board Committee on Public Relations. He has been a member of the service organization for 29 years and is a trustee.

Mumford, now a New York City safety consultant, is a member of the New York State Citizens Safety Council and chairman of its community service committee. He is a member of the New York State Citizens Council, and a past chairman of the safety section, Association of American Railroads.

ASTM Elects New Officers, Board

National officers have been elected by the American Society for Testing Materials at it's 64th annual meeting in Atlantic City, N.J.

New president is MILES N. CLAIR, president of Thompson & Lichtner Co., Inc., Brookline, Mass.

Clair was educated at the Drexel Institute of Technology and the Massachusetts Institute of Technology, where he received his S.M.C.E. He was first associated with the ASTM in 1927 as a representative of his firm on several committees. He has served the ASTM on the American Standards Association Construction Standards Board, of which he is vice chairman. Clair also is past president of the New England Section, American Society of Civil Engineers; past president of the Boston Society of Civil Engineers; past director, American Concrete Institute; and a member of several ASA committees.

Elected vice president was ALFRED C. WEBBER, assistant to the laboratory director, Research and Development Division of the Polychemicals Department, E. I. du Pont de Nemours and Co., Inc., Wilmington, Del.

Don E. Mumford

Webber received his B.S. degree from Bates College, Lewiston, Maine, in 1928, and his M.A. degree from Boston University. He joined Du Pont in 1942. He has represented the ASTM at several international standards conferences, and is a member of the Optical Society of America.

New members of the ASTM board of directors are:

ARDREY M. BOUNDS, chief metallurgist, Superior Tube Co., Norristown, Pa.; ALBERT G. H. DIETZ, professor of building engineering, Massachusetts Institute of Technology, Cambridge, Mass.; BRUCE W. GONSER, technical director, Battelle Memorial Institute, Columbus, Ohio; WAYNE A. KIRKLIN, manager, Analytical Div., Hercules Powder Co., Wilmington, Del.; GORDON M. KLINE, chief, Organic and Fibrous Materials Div., National Bureau of Standards, Washington, D.C.; and JAMES B. RATHER JR., coordinator in charge of toxicology, air and water pollution, Socony Mobil Oil Co., Inc., New York, N.Y.

Railroad Safety Superintendent Named

HOWARD ODOM has been appointed superintendent of safety, New York, Chicago and St. Louis Railroad Co., Cleveland, Ohio.

He succeeds R. C. SABENS, longtime member of the National Safety Council Railroad Section Executive Committee, and chairman of the Railroad Section in 1953-4.

Horse, Mower Fail To Dent Safety Shoes

"My toes would have been a mess!"

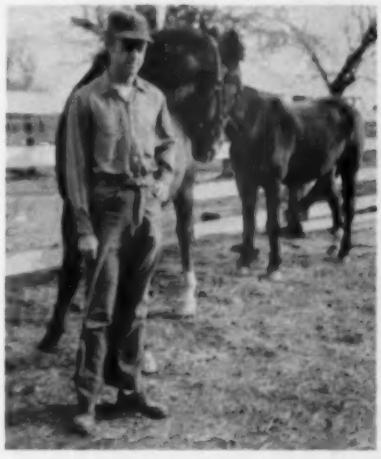
A safety shoe campaign by Boeing Airplane Company, Wichita, Kan., has produced two satisfied customers in Bob Tatum and George Teachman, employees at the plant.

After 14 workers at Boeing suffered off-job foot injuries in 1959, the firm set up the campaign, and Tatum and Teachman each purchased shoes.

Tatum wore his steel-toed footwear one week end during a horseback riding jaunt. After the ride he dismounted to open a gate, and the horse stepped on his foot.

"It was on hard ground, and that horse was heavy," he said. "I know my toes would have been a mess if I'd had on ordinary shoes." Instead, the horse's weight was taken by the shoe safety cap, and Tatum received only a bruised instep.

Teachman reported another mishap but an equally happy ending. While mowing the lawn in safety shoes, his power mower accidentally ran over his foot. "I'm sure if I hadn't had those safety shoes on, I'd have lost a couple of toes," he said. However, the protective shoes reduced his injuries to a minor cut.



Bob Tatum poses with heavy-footed friend.

George Teachman (left) and Bob Tatum, employees at the Boeing Airplane Co., Wichita, Kan., compare results of off-the-job accidents. Safety shoes saved both men from serious injuries.

Voice

– From page 6

NEW YORK. In the June issue of the NATIONAL SAFETY NEWS magazine, there appears on page 33 an article entitled "Do Your Actions Say What You Mean?" We would like to distribute this among our key employees and foremen and are wondering if it is possible for us to have 20 copies of this particular page. We would also like to know if it is possible for us to procure a larger quantity.

– M. ANHALT
General Cigar Co., Inc.

VANCOUVER, B.C. I believe that the article "Do Your Actions Say What You Mean?" together with the quiz, can be utilized to good advantage with the Communications for Safety Training Program. The quiz can be used to secure participation from the members of the training group at the outset of the first session.

I would like to suggest that consideration be given to incorporating this item in the *Leader's Manual*.

– D. W. C. MACBEAN
Accident Prevention Co-ordinator
MacMillan, Bloedel and
Powell River Ltd.

Interest in Back Issues

PLATTSBURGH, N.Y. Would you send me more details on the "Wheel of Chance" which appeared on page 37 of your August 1960 issue.

– K. R. WEEDEN
Personnel & Safety
Diamond National Corporation
Molded Packaging Division

FORT PIERCE, FLA. In your article on "Prevention of Fire or Panic Injuries" in the March 1961 issue of NATIONAL SAFETY NEWS, reference was made to the National Fire Protection Association pamphlet *Employee Organization for Fire Safety*.

Can you furnish us with the address of the National Fire Protection Association as we would like to obtain a few copies of the pamphlet mentioned above and possibly other material that may be of help to us in our safety programs.

– AUGUST STOBER
Personnel Manager
Bell Bakeries, Inc.

The address of the National Fire

Protection Association is 60 Batterymarch St., Boston 10, Mass.

SIOUX FALLS, S.D. In April (I believe) of 1956, NATIONAL SAFETY NEWS carried an article entitled "How Safe Is Your Church?"

Are reprints of this piece available? If not, can we get permission to reproduce it? Our Fire Safety Committee is working on a fire protection plan for churches.

– DURAND C. YOUNG
Executive Secretary
Sioux Falls Safety Council

Our association publishes a magazine entitled the——. We are considering changing printers, and are therefore interested in contacting such organizations. We feel your publication is an example of good workmanship, and wonder if you would give us the name of the organization which prints your magazine. We shall appreciate reply to our inquiry so that we may contact them.

Executive Secretary
————Association

More Mileage for Boiler Article

CHICAGO. We are interested in a number of reprints of "Codes Crusade for Boiler Safety." We intend to provide Western Department boiler men with copies of the article for use in discussions with assureds such as school boards, real estate trusts, and apartment house owners, informing them of the true nature of the hazard and thus correcting misinformed people who control some phases of this equipment. The article would be useful in bringing to the attention of numerous agency and brokerage people who often do not write boiler insurance (because they do not have a conclusive case to present) the necessity of such coverage if an assured is to be fully protected. Some agents do not know how to present the material which is provided to establish need for the coverage, and many do not themselves realize the possible extent of the damage.

If this article were readily available I believe it would be useful to us and others as mentioned. In thus broadly distributing the article, the protection which Mr. Heinrich and his committee hope to achieve should be enhanced.

May I ask that you consider this

matter and if you find others interested, perhaps you could consider running this as a reprint. Since I am a member, and presently a director of the Society of Casualty Safety Engineers, I will bring this matter up during the next meeting in September. I believe further interest will be promoted.

— H. GOSHORN
Supervisor, Boiler and Engineering Department
Phoenix of London Group

That Inflammatory Word

ROCHESTER, N.Y. Writers have a poetic license which allows them to use words in any way they see fit. I do not believe that we in safety work should allow others to alter the solid groundwork that has been laid in establishing the use of the word *flammable*. This contrasts with Mr. Howard T. Fisher's article on Page 56 of the July 1961 issue of NATIONAL SAFETY NEWS.

I am sure that continued usage of the word *flammable* by the National Safety Council, American Society of Safety Engineers, National Fire Protection Association, insurance companies, city and state safety councils, fire departments, handlers and transporters of flammable solvents, et al., will soon obsolete the word *inflammable*. This will be far more effective than trying to eliminate two words by publicizing a new word or by passing a law, as Mr. Fisher suggested. I am sure this approach would have no effect at all. It may take time, but usage makes a word, not laws and dictionaries.

— C. E. PEITSCHER
Safety Engineer
Film Emulsion Division
Eastman Kodak Company

PITTSBURGH, PA. Prof. Howard Fisher's discussion of the problem of *flammable* and *inflammable* is of interest and importance.

The U.S. Coast Guard, which still has responsibility for a large segment of safety enforcement regarding combustible liquids and gases, still continues to use the older word *inflammable*.

Arguments for substitution of a "new" word have merit. Perhaps the word *flameable* would be better than either of the older terms. It at

least has the advantage that its meaning is evident as soon as a child has learned the word and meaning of flame. While this spelling violates the usual rule of English orthography, it is the better fixed in the mind by being the exception, not the rule.

— EMERSON VENABLE
Registered Professional Engineer

MILWAUKEE, WIS. Howard T. Fisher, in the July, 1961 issue of the NATIONAL SAFETY NEWS, warns that danger of the use of the word *inflammable* is becoming more of a problem. He suggested a law be passed prohibiting the use of *inflammable* when associated with burnable materials.

This is not a new problem, but it helps to awaken the public to dangers that could kill or cripple our children, or anyone for that matter.

In 1924 the NFPA "Committee on Inflammable Liquids" asked the Association to change its name to "Committee on Flammable Liquids." The purpose was to avoid the use of the word *inflammable*. Gradually other organizations adopted the word *flammable* to designate burnable materials.

Twenty-four years later the Congress of the United States gave official sanction to *flammable* (Chapter 39, Public Law 772, 80th Congress, Section 835, Approved June 25, 1948, Effective September 1, 1948).

However, passing laws alone does not save lives. There must be enforcement. Enclosed are photocopies of two labels from products purchased in a dime store recently. Note the use of the term *noninflammable* — as if *inflammable* wasn't bad enough.

I think it is about time we quit fooling around with this problem and got to work on it. I suggest that all of the readers of the NATIONAL SAFETY NEWS send in any label, article, or clipping which uses the term *inflammable* to the National Safety Council. This would include the names of trucking firms, for example, using *inflammable* on their vehicles. In turn I suggest the NSC send out form letters to all firms who are guilty of this violation. This letter should ask for a reply as to what action is going to be taken.

This is getting to the root of the problem and will solve it faster than

a new law. I believe most of the firms are uninformed and would be ready and willing to make corrections where necessary.

One more point – Mr. Fisher's article did not mention the word *nonflammable*. There should be only two terms used in this connection – *flammable* or *nonflammable*.

– EDWARD E. RYCZEK
Safety Administrator
A. O. Smith Corporation

HARTFORD, CONN. The Codes and Standards and other publications of the National Fire Protection Association, The National Board of Fire Underwriters and others several years ago discontinued the use of *inflammable* in favor of the word *flammable*. More recently the Interstate Commerce Commission has done the same thing in their regulations and their requirements for markings on tank trucks and tank cars. I believe a majority of the state laws and regulations have done the same thing. It would, therefore, seem too late to do anything about reversing this trend and a great many people feel that it was a step in the right direction.

The prefix "in" means "not" such as in the word "incombustible" meaning that "it won't burn." There have been many cases in the past where people have misinterpreted the meaning of the word "inflammable" and thought that it meant "it won't burn" resulting in many serious accidents. For this reason the word *nonflammable* is used to indicate that a substance won't burn. The organizations mentioned above, as well as regulations of the federal and state governments, have used this word *nonflammable* together with the word *flammable* indicating that "it will burn." It is believed that the meaning of these two words are evident to everyone. It isn't enough to use the word *flammable* unless we use the word *nonflammable* to make sure that people won't think that the word *inflammable* means that "it won't burn."

An article in the August, 1958 issue of *Changing Times* magazine used the words *inflammable* and *noninflammable*. I wrote to the editors about this and they published part of my comments in the Decem-

ber, 1958 issue. They were similar to those I have made above.

Your article states that unless the effort to eliminate the use of the word *inflammable* is 100 per cent, and it is only used in 1 per cent of the cases, this misinterpretation could be dangerous and might cause a serious accident. I agree that this is true. Before, however, when the word *inflammable* was extensively used, the misinterpretation of its meaning occurred many times and did result in serious accidents. This should indicate then that there will be fewer accidents than there were in the past even if only 1 per cent of the cases still use the word *inflammable*.

Everyone everywhere should join in the movement and as rapidly as possible make the use of the word *inflammable* obsolete. My new *Webster's Collegiate Dictionary* lists both words and defines them the same. However, after the word *flammable* it says, "Preferred by many technical writers and publications to the older equivalent *inflammable* because of possible misinterpretation of the prefix 'in' as a negative."

— MYRON A. SNELL
Supervisor of Technical Services
Hartford Accident and
Indemnity Company

SAN ANTONIO, TEX. Mr. Fisher's article, "Flammable-Inflammable," in your July 1961 issue was thought-provoking indeed. It provided a vivid reminder of long discussions in fire protection and building code circles on the use of the terms *incombustible* and *noncombustible*. The latter is becoming more prominent as I thought was the case with *nonflammable*.

The use of an entirely new term such as *burnable* would, in my opinion, add further confusion. Many will hold to the older term and for years two different terms would be in use. I cannot help but feel that the energy required to obtain acceptance of an entirely new term could better be spent in encouraging universal adoption of *flammable*.

A good argument can be made for the retention of the prefix "in" by the etymologist. Yet where one form of a word is confusing and, as in this case, actually may be dan-

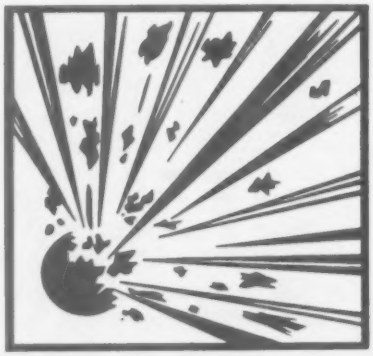
gerous, it would seem that the rules of common sense should apply. If a language is to serve a society, it must be dynamic and subject to modification as the needs of a given time dictate.

— CALVIN H. YUILL
Manager, Fire Protection Section
Southwest Research Institute

Considering the chaos still remaining after years of effort to standardize on flammable, *how about running a picture alongside the word? The International Labour Organisation proposes the use of a flame to show "Danger of Ignition" and a bursting bomb to show "Danger of Explosion."*

The warning symbols below were adopted by ILO's Chemical Industries Committee during its fourth session at Geneva, Switzerland. Government, employer, and worker representatives of 21 leading chemical-producing countries took part. The ILO, a UN associated agency, urges worldwide use of these symbols in marking dangerous substances.

Danger of Ignition



Danger of Explosion

Diary

— From page 16

tion and had, therefore, been passed over when I hired Joe.

Louis is a much less prepossessing person than Joe. He doesn't wear clothes well, doesn't articulate his ideas well. But he does know a good deal about the book-learning side of safety engineering and statistics.

What is far more important, he is a humble young man with good native intelligence. Unless I am very wrong in judging character, he is almost the exact opposite of Joe Burton.

And that, right now, is exactly what I want in an assistant.

Bagassosis Disease Increasing in Industry

Bagassosis, a pneumonia-like disease previously considered rare, recently has been described in the *Journal of the American Medical Association* as "an industrial disease of growing importance."

The disease, first recognized in 1937, is a respiratory disorder caused by inhalation of the dust of bagasse, the dried sugar cane fiber left after the sugar is extracted from the cane.

There are many unexplained aspects of bagassosis. One puzzling feature was the absence of the disease in some great cane-growing areas of the world, such as Cuba, Argentina, Hawaii, the Philippines, and Puerto Rico.

The disease is now known to have resulted from contact with bagasse produced in the United States, Italy, India, and Puerto Rico.

Writing in the *J.A.M.A.*, Dr. Howard A. Buechner of New Orleans said personal observations of cases in Louisiana showed few, if any, resulted from contact with moisture-laden bagasse immediately after it is produced by the cane-grinding operation, or from exposure to freshly baled material.

It is only after the baled bagasse has been stored outdoors and allowed to undego thorough dehydration, and perhaps degradation from the effects of heat and exposure, that it apparently becomes capable of producing disease.

Coming Events

Sept. 12-14, Greensboro, N.C.
Southeastern Plant Engineering and Maintenance Show and Seminar (War Memorial Coliseum). Robert E. Zimmerman, John Harden Associates, P.O. Box 3173, Greensboro.

Sept. 21-22, Baltimore, Md.
Governor's Annual Safety-Health Conference and Exhibit (Hotel Emerson). Joseph A. Haller, executive chairman, Dept. of Labor and Industry, State of Maryland, 301 W. Preston St., Baltimore 1, Md.

Sept. 21-22, Salt Lake City, Utah
Annual Fall Convention of the Utah Industrial Safety Society (Prudential Federal Building). E. B. Robbins Jr., president, P.O. Box 1722, Salt Lake City, Utah.

Sept. 25-26, Manhattan, Kan.
Twelfth Governor's Industrial Safety Conference for Kansas (Kansas State University). Harold L. Smith, commissioner of labor, Kansas Dept. of Labor, 401 Topeka Blvd., Topeka, Kan.

Sept. 25-28, New York City
1961 Industrial Building Exposition (New York Coliseum). Ed Grief, Banner and Grief, 369 Lexington Ave., New York 17.

Sept. 26-27, Harrisburg, Pa.
Annual Occupational Safety Conference, Pennsylvania Department of Labor and Industry. Frank K. Boal, deputy secretary, Dept. of Labor and Industry, Harrisburg.

Sept. 26-28, Philadelphia, Pa.
Sixth Annual Sanitation Maintenance Show (Hotel Sheraton). Sponsored by the Institute of Sanitation Management. Leonard S. Rogers, 310 Lexington Ave., New York 16.

Sept. 27, Niagara Falls, Canada
Chemical Industry Workshop (Hotel Sheraton Brock). F. G. Stephenson, sec., General Safety Committee, Manufacturing Chem-

ists' Association, Inc., 1825 Connecticut Ave. N.W., Washington 9, D.C.

Oct. 2-4, Denver, Colo.
Twenty-first Annual Congress on Occupational Health (Brown Palace Hotel). American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.

Oct. 10-12, Houston, Tex.
Twelfth Annual Conference on Standards (Rice Hotel). H. C. Ball, Humble Oil and Refining Co., Baytown, Tex.

Oct. 14-15, Chicago
American Optometric Association Conference on Industrial Vision (Conrad Hilton Hotel). Richard L. Irwin, American Optometric Association, 4030 Chouteau Ave., St. Louis 10, Mo.

Oct. 16-20, Chicago
Forty-ninth National Safety Congress and Exposition (Conrad-Hilton Hotel). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

Oct. 25-26, Pittsburgh, Pa.
Twenty-sixth Annual Meeting, Industrial Hygiene Foundation (Mellon Institute). Dr. H. H. Schrenk, managing director, Industrial Hygiene Foundation, 4400 Fifth Ave., Pittsburgh, 13.

Oct. 27, Manchester, N.H.
Fourth Annual Conference, New Hampshire Accident Prevention Council. Ronald G. Logan, sec., P.O. Box 170, Nashua, N.H.

Oct. 27-29, Pensacola, Fla.
Florida State Industrial Nurses Convention (Holiday Inn). Aileen Liberis, Northwest Florida Industrial Nurses Association, 8 N. "G" St., Pensacola, Fla.

Oct. 30-Nov. 1, Kansas City, Mo.
Annual Fall Conference of the National Fire Protection Association (Hotel President). 60 Batterymarch St., Boston 10, Mass.

Nov. 6-9, Chicago
Atom Fair 1961 (Conrad Hilton). Atom Industrial Forum, 850 Third Ave., New York 22, N.Y. (In conjunction with annual meetings of the American Nuclear Society and Atomic Industrial Forum.)

Nov. 8-9, Columbia, S.C.
Twenty-fourth Annual South Carolina Accident Prevention Conference (Wade Hampton Hotel). Fred Derrick, South Carolina Industrial Commission, 1015 Main St., Columbia.

Nov. 13-17, Detroit
Eighty-ninth Annual Meeting of American Public Health Association (Cobo Hall). Joseph G. Molner, M.D., Health Commissioner of Detroit, City Hall.

March 6-8, 1962, Washington, D.C.
Biennial meeting of the President's Conference on Occupational Safety. Secretary of Labor Arthur J. Goldberg, general chairman.

Mar. 20-21, 1962, Fort Wayne, Ind.
Northeastern Indiana Safety Conference. Ivan A. Martin, manager, Safety Council, Chamber of Commerce Bldg., Fort Wayne, Ind.

Mar. 25-28, 1962, Dallas
Annual Texas Safety Conference (Adolphus Hotel). J. O. Musick, general manager, Texas Safety Association, 830 Littlefield Bldg., Austin, Tex.

March 27-29, 1962, Pittsburgh, Pa.
Thirty-seventh Annual Western Pennsylvania Safety Engineering Conference and Exhibit (Pittsburgh Hilton). Harry H. Brainerd, Western Pennsylvania Safety Council, 305 First Federal Bldg., Pittsburgh 19.

April 2-3, 1962, Boston, Mass.
Forty-first Annual Massachusetts Safety Conference and Exhibit (Statler Hilton). Bert Harmon, Massachusetts Safety Council, 54 Devonshire St., Boston 9.

April 9-13, 1962, New York City
Greater New York Safety Council Convention and Exposition (Statler Hilton Hotel). Robert J. O'Donnell, executive director, Greater New York Safety Council Inc., 60 E. 42nd St., New York 17.

April 10-11, 1962, Oakland, Calif.
Tenth Annual Northern California Safety Congress (Hotel Claremont). Clinton W. Dreyer, Eastbay Chapter, NSC, 1322 Webster St., Oakland 12.

May 7-11, 1962, Detroit, Mich.
Twenty-ninth International Foundry Congress and Exposition (Cobo Hall). American Foundrymen's Society, Golf and Wolf Rds., Des Plaines, Ill.

This man-made cavern, largest ever hewn from solid granite, is serving as a storage vessel for 400,000 barrels of propane. The cave was purged of air with 112 tons of CO_2 to create a safe, noncombustible atmosphere before propane was pumped in. (Courtesy Cardox Div., Chemetron Corp.)

Store 400,000 Barrels Of Propane in Cave

WORKERS recently completed storage of 400,000 barrels of propane in a 2.2-million-cu.-ft. man-made underground cave near Sun Oil Company's Marcus Hook, Pa., refinery.

Hewn from solid granite, the cave is 380 ft. below ground level. Since its only entrance is a 42-in. shaft, all equipment – including a bulldozer – had to be taken apart above ground, lowered through the shaft to the cave, and put together. It took 285,710 trips to hoist broken granite.

It was necessary to purge the completed cave to avoid explosive mixture of air and propane. To do this, workers of Cardox Div., Chemetron Corp., introduced 112 tons of CO_2 through two 3-in pipelines extending from the surface into two sumps at the cave bottom. As the heavier-than-air gas entered at the cave bottom, air discharged through a vent at ground surface.

When most of the air in the cave had been displaced, workers began injection of propane, leaving the vent open to permit escape of remaining air and most of the CO_2.

Small amounts of CO_2, remaining in the cave after closure of the vent were absorbed in the propane and will have no important effect on its combustion properties, an oil company spokesman said.

KEEPING POSTED!

Watch this space each month for late news on NSC services. Use the handy Order Form to request sample copies of publications listed in this issue or to order safety merchandise.

SEPT. 1961

Plan Now for Congress Week... Check Your

PRELIMINARY CONGRESS PROGRAM

The 1961 National Safety Congress will open its doors in just a few short weeks . . . Oct. 16-20 at the Conrad Hilton Hotel in Chicago. Start planning your time now, to benefit from every hour you spend at this most inspiring, most educational of all industrial safety events. A preliminary program of activities is available without charge to everyone interested. Most of the 400+ meetings, lectures and special events waiting for you at the Congress are described in this advance calendar of events. Perhaps you have already received your copy in the mail. If not,

WRITE FOR YOUR FREE PROGRAM TODAY.

New Book Points Out Dangers of

NIGHT DRIVING

Traffic deaths rise more than 100% when the sun sets! Darkness imposes many additional traffic hazards that drivers tend to overlook.

The illustrated 12 page booklet "Driver in the Dark" alerts readers to the need for extra caution when driving at night. It points out causes of trouble, and recommends safe driving practices. Once you review this booklet, you will want to pass along its sound advice to every one of your employees, whether they drive for business or for pleasure. Request a free sample copy today, or place your quantity order.

(399.11) Prices, each: 50—$.07; 500—$.062; 1,000—$.054; 5,000—$.046; 10,000—$.042.

Latest Statistics Just Released...

ACCIDENT FACTS, 1961

The 1961 edition of "Accident Facts" should be one of your most valuable reference books for the next twelve months. It is the most complete and informative collection of statistical accident information published by the National Safety Council.

The new edition contains 96 pages of facts and figures on industrial, home, farm, school and traffic accidents. It reports injuries, fatalities and accident costs . . . indicates when, why and how accidents happen. Single copies are provided automatically to NSC members and to Administrative Unit holders. Additional copies available at these prices:

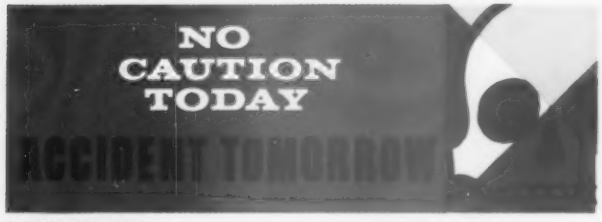
(021.61) Prices, each: 1—$1.85; 2—$1.50; 10—$1.35; 100—$1.25.

USE THE HANDY ORDER FORM ON FOLD-IN PAGE, FOLLOWING.

New POSTERS

NOVEMBER 1961

JUMBO POSTERS 11 ft. 8 in. x 9 ft. 11 in.

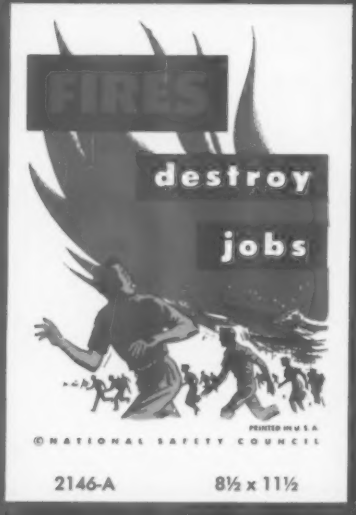


NOVEMBER 1961

SAFETY BANNERS

10 ft. x 3 ft. 6 in.

H-2208-A 8½ x 11½

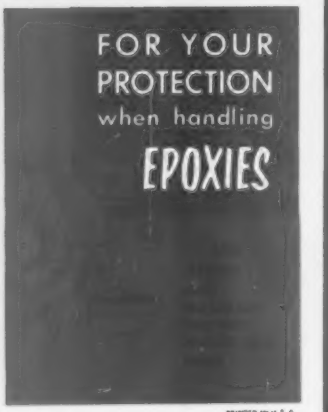


2146-A 8½ x 11½

2073-B 17 x 23

1875-A 8½ x 11½

2071-B 17 x 23



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1851-A 8½ x 11½

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V-2192-B 17 x 23

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1990-A 8½ x 11½

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2200-A 8½ x 11½

SEE FOLD-IN PAGE FOR

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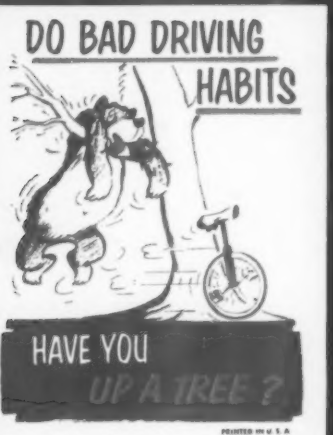
2194-A 8½ x 11½



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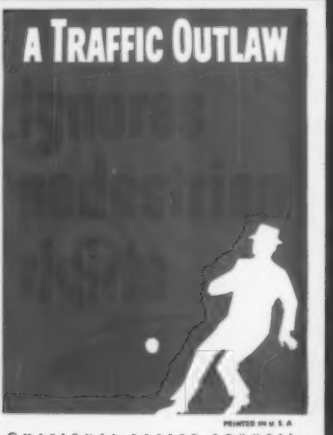

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T-2188-C 25 x 38
T-2189-A 8½ x 11½

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BOOKLETS

Employee education booklets are a basic part of your safety program. Several recent booklets are described below. Sample copies of these booklets may be obtained by circling the code number on the order form or they can be ordered in quantity for prices shown.

SAFETY HINTS FOR THE ELDERLY

A series of six leaflets that discuss common physical impairments of the aged. They suggest environmental aids and personal safety tips on preventing accidents. Each leaflet is 4 pages, 3½" x 8", colorfully illustrated. Subjects: Forget Things?, A Little Shaky?, Poor Sight?, Tire Easily?, Doubtful About Driving? and Worried About Walking?

STOCK NO. 599.20—Complete set of six leaflets (cost per set): 10—$.18; 50—$.165; 500—$.138, 1,000—$.126.

HAZARD HUNTING

A delightful 12 page booklet, packed with dozens of practical home safety tips. Cleverly illustrated with light cartoons, there's a laugh with every lesson. The entire family will enjoy and profit from reading this booklet.

STOCK NO. 599.65—Cost per booklet: 50—$.075; 500—$.062; 1,000—$.058; 5,000—$.052; 10,000—$.047; 20,000—$.043.

POCKET GUIDE TO FIRST AID

This condensed manual of first aid procedures is small enough to be carried permanently in a wallet or purse. When injury strikes, the facts are there at hand . . . stated briefly, concisely for fast reading and immediate action.

STOCK No. 195.05—Cost per booklet (minimum order 50 copies): 50—$.07; 500—$.063; 1,000—$.057; 5,000—$.048; 10,000—$.043; 20,000—$.04.

SEAT BELTS SAVE LIVES

This booklet tells the seat belt story, simply, clearly and convincingly. 8 pages, attractively illustrated, it should appeal to the better judgment of motor vehicle drivers who want to improve their chances of surviving accident crashes.

STOCK No. 399.31 — Cost per booklet (minimum order 50 copies): 50—$.06; 500—$.05; 1,000—$.045; 5,000—$.04; 10,000—$.035; 20,000 — $.032; 50,000—$.029; 100,000—$.026; 500,000—$.023; 1,000,000—$.021.

SAFETY EVERYWHERE . . . ALL THE TIME!

A series of 12 leaflets keyed to the dynamic theme of this special safety campaign. Each leaflet discusses safety as a family activity. 12 different topics are covered (see order form for individual stock nos. and titles). Printed in 3 colors, 3" x 6" in size, these leaflets are ideal for reading racks, handouts and mailings.

PRICES—Individual leaflets, any selection, each: 50—$.03; 500—$.025; 1,000—$.022; 5,000—$.017; 10,000—$.015. See order form for subjects.

POSTER PRICES*

SIZE	QUANTITIES				
	1	10	100	1000	5000
Suffix "A"		$.13	$.077	$.066	$.055
Suffix "B"		.25	.21	.17	.13
Suffix "C"	$.44	.33	.26	.24	.22

*NSC Members receive 10% discount on above prices. Quantity prices apply on a single shipment to one location. Please enclose check with orders less than $3.00. Prices subject to change without notice.

NOTE: New Safety Banner and Jumbo Poster are shown as a service to regular subscribers. Non-subscribers may obtain prices and information by using order form or writing council.

NATIONAL SAFETY COUNCIL

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ORGANIZATION_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

ATTENTION OF_____

KEEPING POSTED MATERIALS

Quantity	Stock No.	Description
	———	PRELIMINARY PROGRAM, 1961 NATIONAL SAFETY CONGRESS
	399.11	DRIVER IN THE DARK
	021.61	ACCIDENT FACTS, 1961

DATA SHEETS

☐ 123.07 Compete set of 285 sheets in two binders.
☐ 123.08 Subscription service
☐ Please send numerical index of data sheet titles, MS343.

JUMBO POSTERS AND SAFETY BANNERS

☐ Please send Jumbo Poster and Safety Banner Brochure No. MS295.

SAFETY POSTERS (sorry no samples)

Stock No.	Quantity	Stock No.	Quantity	Stock No.	Quantity
1851-A		2080-A		T-2188-C	
1875-A		2146-A		T-2189-A	
1990-A		2194-A		V-2191-A	
2071-B		2200-A		V-2192-B	
2073-B		H-2208-A		V-2193-B	

SAFETY BOOKLETS

QUANTITY	STOCK NO.	DESCRIPTION	FREE SAMPLE
	599.20	Safety Hints for the Elderly (set of 6)	
	599.65	Hazard Hunting	
	195.05	Pocket Guide to First Aid	
	399.31	Seat Belts Save Lives	

For Free sample of any of the above simply place check mark in column indicated.

SAFETY EVERYWHERE LEAFLETS

Quan.	Stock No.	Description	Quan.	Stock No.	Description
	192.41	Prevent Falls		192.50-1	Dress Safely
	192.42	Use Hand Tools Safely		192.50-2	Drive and Walk Safely
	192.43	Safety is Good Housekeeping		192.50-3	Handle Materials with Care
	192.44	Safety is a Family Effort		192.50-4	Operate Machine Tools Safely
	192.45	Vacation with Safety		192.50-5	Prevent Fires
	192.46	Water and Safety-Fun		192.50-6	Safe Holidays (Xmas-New Year)

NATIONAL SAFETY COUNCIL MEMBERS ARE ENTITLED TO A 10% MEMBERSHIP DISCOUNT

GREEN CROSS FOR SAFETY ® NATIONAL SAFETY COUNCIL

Wire

— From page 24

lution caused by crankcase breather fumes) and anchors for seat belts in the front and rear seats. The secretary of health, education and welfare urged all federal agencies to install seat belts as soon as possible, and said that this federal leadership was "well worth the attention of other governmental and private organizations and the public." The surgeon general of the U.S. Public Health Service cited estimates that the general use of seat belts would save some 5,000 lives annually and prevent many thousands of permanent disfigurements and disabilities.

Plans developed under the sponsorship of the U.S. Department of Commerce project a federal test of the feasibility of automatic electronic highways. The government would supply special test equipment which will control steering, acceleration and braking on a two lane, 100-mile test section of the interstate highway system. The cost of the experiment is estimated at $50 million for roadway construction and electronic equipment. Under the plans discussed, the electronic system would take over complete control of the car for the period in which it was being used.

Senator Yarborough (Tex.) told the Senate that "it is abundantly clear" that the shipment of pep pills through the mails in interstate commerce "presents a health hazard which demands federal legislative action for more effective controls."

The Interstate Commerce Commission proposed extensive amendments to its regulations concerning the transportation of explosives and other dangerous articles.

The President's Committee for Traffic Safety embarked on a program designed to encourage promotion of off-the-job traffic safety programs. "Off-the-job vehicle accidents have accounted for more deaths than at-work accidents for more than 10 years now," said the Committee in urging business and industrial firms to conduct traffic safety programs among their employees.

Aviation Safety. The House of Representatives passed H.R. 8102, amending the Federal Airport Act. The bill would authorize federal aid in the amount of $375 million over five years. The Congress gave considerable specific attention to safety in this legislation:

1. The bill limits the use of federal funds in the construction of airport buildings to that portion of an approved project which is directly related to the safety of persons at the airport.

2. In order "to place greater emphasis on the safe and efficient use of airports by aircraft," said the House Committee's report, the bill authorizes the federal aviation administrator to withhold approval of projects unless provision is made for the installation of certain landing aids "as are determined by him to be required for the safe and efficient use by aircraft of the airport." The Committee's report makes specific mention, in this regard, of in-runway lighting, high-intensity runway lighting, and runway distance markers as "important safety aids." The bill also authorizes the federal grant to pay 75 per cent, instead of

the previously authorized 50 per cent. of the cost of such landing aids.

3. The bill permits the FAA to build control towers and other facilities.

A House committee also held hearings on H.R. 7301 and H.R. 7307, concerning the investigation of aircraft accidents.

The House Committee on Armed Services favorably reported H.R. 7934, a bill to authorize the secretaries of the military departments to make emergency payments up to $2,000 in the case of injury, death, or property damage resulting from an accident involving military aircraft or missiles.

Senator Hartke (Ind.) told the Senate that "We have been apathetic toward air safety. We have been willing to gamble with the lives of passengers." And he called for "constant" pressure for air safety, not merely as a reaction to invididual air tragedies. In particular, he urged consideration of plans for the testing of new airplanes prior to passenger use.

The FAA has under consideration its first airworthiness review. The FAA and the Federal Communications Commission have continued their joint discussions on plans dealing with tall towers that project into navigable airspace. The FAA resumed publication of its *General Aviation Inspection Aids*, which it called "a popular safety aid." According to the FAA, "the value of the aids lies in the discovery of any trend or pattern of maintenance difficulties that can be caught and corrected in time to prevent accidents." The FAA also issued a new manual on airport design, which stresses current technological factors contributing to safety in airports.

Marine Safety. The Coast Guard changed the casualty classification system in its required accident reporting, and issued new forms for submitting reports of casualties and accidents.

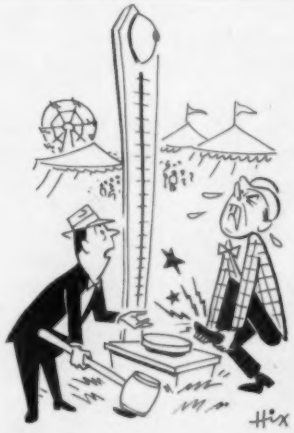
The AEC authorized, subject to certain conditions, fueling, start-up, and operation of the nuclear reactor of the *N.S. Savannah*, the world's first nuclear cargo-passenger ship, for test and demonstration purposes and for initial sea trials of the vessel. According to the AEC, it has applied to the review of the nuclear

safety aspects of the ship's construction and operation the same standards applied in the review of licensed reactors. The AEC's authorization was based on its finding "that there is reasonable assurance that the *N.S. Savannah* nuclear power plant may be safely fueled and operated through the initial sea trials." After completion of the initial sea trials, there will be a review of the test operations and a further public hearing.

The annual conference of the International Union of Marine Insurance to be held in Portugal in September will consider nuclear insurance and current maritime safety developments.

The Federal Trade Commission published its *Trade Practice Rules for the Pleasure Boat Industry*. Rule No. 1 forbids any "representation or circumstance (including failure to adequately disclose relevant facts) having the capacity and tendency or effect of misleading or deceiving purchasers or prospective purchasers with respect to size, weight, accommodations, load capacity . . . safety . . . " The Commission added this explanatory note to the rule: "Among the practices to which the prohibitions of this section are applicable are pictorial or other representations, either direct or indirect, which create a false impression as to the safe passenger and/or property load capacity of a boat, and/or the maximum weight and horsepower of motor or motors with which it may be safely equipped."

Farm Safety. The U.S. Department of Agriculture proposed



"I'm terribly sorry, but you really should wear safety shoes on this job."

amendment of its regulations for the enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

The department justified its action on the ground that "accident records show that deaths have resulted from exposure to low percentage formulations [of economic poisons]. As a consequence, stronger precautionary labeling . . . appears to be necessary to protect the public health."

The USDA also announced that there are annually about 75,000 power mower accidents in the United States, of which 90 per cent occur with rotary-type mowers. The department's information is that 70 per cent of these accidents result from finger and toe contact with the mower and 30 per cent result from flying objects.

Public Safety. The President proclaimed the week beginning Oct. 8, 1961 as Fire Prevention Week. He urged all agencies to observe the week "by bringing fire safety facts effectively to the attention of the public" and asked public support of the fire prevention activities of fire departments in avoiding "the shameful waste caused by preventable fires."

The Food and Drug Administration further suspended until Feb. 1, 1962 (from an earlier extension to Aug. 1, 1961) the applicability of certain portions of the Federal Hazardous Substances Labelling Act for all hazardous substances defined in the act except "highly toxic," "extremely flammable" and "flammable." The stated purpose of the further extension was to enable the government to consider comments received on the proposed regulations.

The U.S. Public Health Service proposed to amend its *Drinking Water Standards,* after consultation with an advisory committee. For the first time, they would include limiting concentration of radioactivity and provide limits for several new chemicals as well as a gross limit for the concentration of some types of synthetic chemicals.

The appropriation bill for the U.S. Public Health Service has cleared through the House and the Senate, but must be reconciled by

the two houses. For accident prevention activities, the last appropriation was $2,905,300. The administration requested for this fiscal year, and the House voted, an increase to $3,368,000. The Senate raised this amount by $250,000 to $3,618,000. The Senate committee justified this increase as a means of enabling expansion of training and demonstration programs.

In general, the Senate committee asked for "greater emphasis on prevention of accidents and development of methods of treating accident victims."

The Senate also approved $8,900,000 for air pollution activities, an increase of $300,000 over what the House allowed, which was itself $500,000 more than the budget requested and $1,100,000 higher than the last appropriation.

For radiological health programs, from a previous budget of $7,660,000, the House approved the full amount of the request for the new year, $9,147,000, and the Senate voted an increase of $1,500,000 over the House-approved figure, of which $500,000 was for training grants and $1,000,000 for research and demonstration projects. The Senate committee, however, completely disallowed a supplemental budget request of $3,515,000 for the acquisition of a site and for plans and specifications for an environmental health center, on the stated ground that the site contemplated was "an extremely poor selection" and that an inadequate justification had been submitted for the request.

"Pete yelled, 'Grab that OFF lever'."

Outsized spectacle frames—once an optometrist's sign—promote eye protection at a Philadelphia brewing firm. This display reminds personnel entering the brewer's bottling house to don safety glasses, required in this plant.

King-Size Spectacles Shine for Sight Safety

Continuing their long, venerable service to the sight of Philadelphia citizens is a mammoth neon-lit pair of old-fashioned spectacle frames. For years the oversized pince-nez had hung over the shop of an optometrist as an advertising sign and guild hallmark.

During renovation of the facade of the office building for a new tenant, the weathered glasses were taken down. Except for Bill Mulvenna, Schmidt brewery safety director, they might have disappeared into the limbo of a scrap heap or the catacombs of a junk shop.

Mulvenna had long coveted the glasses, seeing in their larger-than-life size and neon outline a unique way to sell eye safety.

He bought the huge frames, had them repaired, and added a pendant sign to carry his safety message. The unit then was suspended over the main entrance to the brewery's bottle house, where safety glasses are mandatory.

The 2 by 5 ft. frames, with their message "Wear safety glasses when in this area" on one side and "Think, be careful—not sorry" on the other, created an immediate impression on workers.

They serve as a constant hard-to-miss reminder to those passing into the shop to put on their protective glasses, and are a conversation piece.

This unusual incentive for eye protection is credited with helping improve the organization's bottling safety record.

NEW SAFETY EQUIPMENT

Products listed in this section have been reviewed by a committee of the Industrial Department of the National Safety Council. Only those which comply with the advertising policy of the National Safety Council are accepted. However, the information is based on literature from the manufacturer, and the Council does not accept responsibility for statements or claims made herein. Nor does the listing of a product in this section imply endorsement by the National Safety Council.

Multi-Purpose Lift Trucks

According to the manufacturer, the Di-Pelco ratchet-operated multi-purpose lift trucks used singly or in pairs, are a versatile, safe, lifting and moving device.

1

2

3

Among the units used are: (1) for heavy bulky loads; (2) as a conventional hand truck; (3) as a floor dolly. Immediately available from D. L. PEZZUTI SALES, 320 Bobble Ave., Endicott, New York.

(Item 150)

Respirator Has Mask Mounted Regulator

A light-weight respirator with mask-mounted regulator eliminates the long, bulky breathing tube common to the older models. Air flows directly through the regulator to the inside of the mask.

The regulator operates on the demand principle supplying air in any amount required by the wearer. A control knob on the front of the regulator can be adjusted to provide a continuous, cooling flow of air for workers in humid atmospheres and also to prevent fogging.

A small neoprene supply hose passes from the regulator snugly over the wearer's shoulder and back. This hose connects to the low pressure air supply line with a standard fitting. A snap is provided so that the hose assembly at the fitting can be attached to either one of two D-rings on the waist belt. This prevents the drag of the line hose from being transmitted to the mask.

The new regulator is ½ in. smaller in diameter and is approximately ¾ in. less in thickness than the regulator used on previous models.

Other features of the regulator include quick disassembly and assembly, self-sealing diaphragm, snap-ring lock of regulator assembly and a quick-disconnect fitting between regulator and mask. Both full-face mask and half-mask models are available. SCOTT AVIATION CORP., 211 Erie St., Lancaster, N.Y.

(Item 151)

Hammer-Knife Mower For Small Riding Tractors

The new 32" MOTT Hammer-Knife mower is available in three models: tractor powered front model, self-powered front model and the self-powered trailer type unit. The trailer type unit can be ganged for wider cutting swath. It is powered with a 5½ HP, 4 cycle engine and can be used with any small riding tractor.

The 88 lightweight free-swinging blades fold back from obstructions and return to cutting position when clear . . . thus minimizing possibility of danger from flying sticks, stones and other debris. Knives require no setting. They accept repeated sharpening and are easily replaced when required. Ruggedly built to withstand the most adverse mowing conditions. MOTT CORP., 500 Shawmut Ave., P.O. Box 278, La Grange, Ill.

(Item 152)

Portable Alarm Is Transistorized

The Port-O-Larm, which uses a pocket-size radio transistor to signal a fixed receiving unit, has been introduced by the Kidde Ultrasonic & Detection Alarms Division, WALTER KIDDE AND CO., INC., Clifton, N.J.

When a button on the small transmitter is pressed, a radio signal is sent to the receiver, causing an alarm to sound locally, remotely or at a central station. It can also control lights and other electrical equipment.

The device can be used by plant guards to signal trouble, or by workers in remote places who need assistance.

Two transistorized transmitters are available. One is about the size of a slide rule case (10 in. long), weighs only 15 oz., and has a range of 120 ft. The other is 5 in. long, weighs 10 ounces, and has a range of 100 ft. The transmitters operate on a long life 15 volt battery and the receiver on 115 volt power.

(Item 153)

Miniature Nonmagnetic Wrenches Available

A line of small nonmagnetic open end wrenches has been introduced by THE BERYLLIUM CORP., P.O. Box 1462, Reading, Pa.

The wrenches, intended for the electronic industries, are made of a beryllium-copper alloy that provides the unique characteristics so desirable in assembly, repair or maintenance of electronic equipment.

Open end sizes available are $\frac{3}{16}$ in. x $\frac{3}{32}$ in., ¼ in. x $\frac{5}{32}$ in., $\frac{5}{16}$ in. x $\frac{1}{32}$ in., and ⅜ in. x $\frac{7}{16}$ in., with overall wrench length measuring only 3½ in. The wrenches will complement the Berylco line of miniature pliers and socket wrench sets.

(Item 154)

Safety Cap, Goggles Combinations

Newly developed, lightweight side arm attachments for combining safety caps with goggles are now in production by the FIBRE-METAL PRODUCTS Co., 5th and Tilghman Sts., Chester, Pa.

The combination illustrated (F-4055-P-2Q), of SuperGlas Safety Cap with Solo goggle, may be used by workers who require full-time head protection with intermittent eye protection. The goggle, when not in use, is merely extended over the cap bead to rest anywhere on the cap.

The telescoping aluminum side arms are adjustable, of sturdy construction, and contain no parts that might crack, break or corrode.

(Item 155)

New Concentrates for Flaw Detection

Old "Photo" Magnaglo method — New "Colorcentrate" Magnaglo method

A new family of materials for the wet method of visible and fluorescent magnetic particle testing is being introduced by MAGNAFLUX CORP., 7300 W. Lawrence Ave., Chicago Ill.

The new materials feature easy mixing, handling, and storage; a measurable increase in fluorescent brilliance from 70 per cent to 600 per cent; closely controlled particle size range; little foaming; and corrosion protection.

The complete family consists of eight different materials – four for the visible red or black method and four for the more sensitive fluorescent method. Certain concentrates are formulated specifically for oil suspensions, others for water. Each has different characteristics related to particle size, magnetic properties, color contrast and concentrations.

(Item 156)

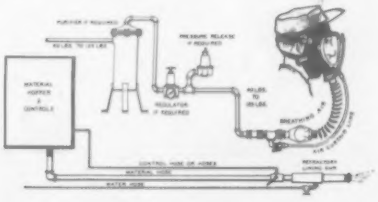
New Salt Tablet Dispensing

Impregnated, controlled-action salt tablets in expendable plastic dispensers with a special air-lock to lock out moisture and fumes, are offered by MEDICAL SUPPLY CO., Rockford, Ill.

Because the dispenser is made of transparent plastic, it not only seals in the freshness of tablets, but allows a quick visual check on the supply. It is available in 500 and 1,000-tablet size. Both can be mounted on plant and office walls as well as on trucks and other field equipment.

(Item 157)

Hose Mask Has Air Curtain Attachment



ACME PROTECTION EQUIPMENT CO., 1201 Kalamazoo St., South Haven, Mich., announces its Curtain Air Mask for cupola liners who operate refractory placement guns for daily lining jobs.

The attachment on the outside of an air mask supplies a controlled flow of air near the lenses. This captures and carries away all but the heavier "gobs" of wet refractory mud that spatters off walls of cupolas during a relining job. The lenses remain prac-

tically clear during an entire unloading of the material hopper.

The hazard run by not wearing a respirator, or having to frequently change filter and clean goggles is eliminated.

The outfit consists of the Zephyr-Air Mask fitted with the Curtain Air attachments, the required hose, gauges, safety popoff, regulator and filters.

The unit requires approximately 10 to 22 cfm at from 40 to 100 psi pressure of air.

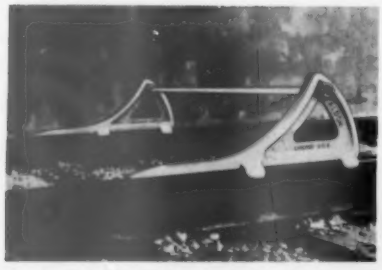
(Item 158)

Multiple Lockout Box

A multiple lockout for electric switch and fuse boxes has been introduced by INDUSTRIAL PRODUCTS Co., Philadelphia. Slots are provided for six padlocks so that each workman may have his own padlock and key assuring that the box cannot be reactivated until all men working on the line have completed their work. The two ends of the lockout are said to provide for virtually any type of electrical equipment even in latest large handled front switching units (illustrated).

(Item 159)

Rail Skate Weighs 95 lbs.



A newly designed and engineered friction type, rail skate protects warehouse train doors, cross-over walks and bridges, and guards against car puller runaways and possible drifting toward the main line or dead-end of the track. They have also been designed for spot stopping at warehouse doors and docks.

Weighs 95 lbs. per set, is portable, and can be applied or removed from the track without tools. THE ALDON Co., Dept. F, 3338 Ravenswood Ave., Chicago 13, Ill.

(Item 160)

7½ V. Emergency Light

Model No. 2-75 automatic emergency light has ben announced by U-C-LITE MFG. Co., 1050 West Hubbard St., Chicago 22, Ill.

Designed to plug into any ac outlet and provide instant automatic emergency lighting whenever regular lighting fails, the unit operates on a standard 7½ V. dry battery. Unit is equipped with two 5 in. lampheads, and with mounting brackets welded to battery container. It also includes a built-in voltmeter and momentary contact switch for testing battery voltage, and a neon bulb that glows when unit is plugged in for service.

(Item 161)

Introduce Paint Respirator

A new respirator, designed to protect against all paint sprays and vapors, lead-based enamels, and lacquers, is being marketed by the PULMOSAN SAFETY EQUIPMENT CORP., 644 Pacific St., Brooklyn 17, N.Y.

Designated the C 251, the unit is part of the interchangeable C 200 series. It weighs less than 8 oz., contains a single replaceable cartridge. All parts are independently replaceable.

Approved by the U.S. Bureau of Mines.

(Item 162)

Safety Shoes For Dress, Casual Wear

Hy-Test Safety Shoe Division is introducing a line of dress and casual styles called Supervisor Styles.

The shoes have new lasts, a slim look, and a new Anchor Flange Steel Box Toe. The first group in the line includes two oxfords and two slip-ons. Additional styles will be announced later.

The oxford styles come in brown or black, oak leather sole, rubber heel, and new Supervisor last. Sizes range from AA 8-12, 13, 14 to EEE 5-12, 13.

The slip-on style also comes in brown or black, oak leather sole, rubber heel and new Supervisor last. Both of the brown styles are highlighted with an antique shadow-tone.

Slip-on styles come in size B 7-12, 13 to E 5-12, 13.

All styles meet the safety specifications of the American Standards Association. INTERNATIONAL SHOE Co., 1509 Washington Ave., St. Louis, Mo.

(Item 163)

Cork Cushioned Sole

This cork Neolite sole was introduced to the casual and work shoe market at the North American Factory Management Conference in Cincinnati. It offers an attractive and functional appearance and a soft, springy feel due to its comfortable cork cushion. GOODYEAR TIRE & RUBBER Co., Akron 16, Ohio.

(Item 164)

Ambulance Cot Wheel

More headroom in ambulance or other types of emergency vehicles is afforded by a 4 in. wheel that has reduced the overall height of Ferno ambulance cots.

The wheel has a cushion tire with 60 per cent greater tread width designed for quiet, shock-absorbing operation. The company claims all the rolling and riding benefits of larger wheels. The new wheel revolves on a lifetime lubricated. precision-made ball bearing. The heavy-duty aluminum sprocket and hub gives strength and stability. FERNO MFG. Co., Greenfield, Ohio.

(Item 165)

Do-It-Yourself Floor Resurfacer

"Tripoxy," a cold-process epoxy type resurfacing and patching material for concrete, wood, and metal floors has been announced by MASURY-YOUNG CO., Boston, Mass. Tripoxy offers the following advantages: toughness (4 times stronger than heavy duty concrete); durability (2-6 times more abrasion resistant than heavy duty concrete); quick, permanent adhesion; high resistance to chemicals; permanent color; rapid curing; easy application.

Composed of an epoxy resin binder, pigmented hardener, and special sand aggregate.

(Item 166)

Sound Meter Designed To New ASA Weights

Measuring 2 in. x 3 in. x 6 in., the new Model 450 sound meter can be held in the palm of one hand. It weighs 2 lbs., and is operated by 22.5 V. battery with an operating life of 30 hours.

The meter has a wide range of operation – from 35. – 142 db sound level, range and a 40-8000 cps response. This completely transistorized unit comes in a heavy gauge aluminum case. It has a Rochelle salt diaphragm-type microphone, and a direct reading scale.

Designed to the new ASA Standard A, B, and C weightings. The amplifier is stabilized against voltage and temperature changes. H. H. SCOTT, INC., Instruments Div., Dept. P, 111 Powdermill Rd., Maynard, Mass.

(Item 167)

Safety Jacket Worn Like Vest

An industrial vest-type, Coast Guard approved safety jacket is designed for bridge workers, dock workers, ship workers, off shore rig workers . . . all who work near water.

Features include: face-up action; removable flotation pads; lightweight, permanently buoyant expanded vinyl foam; resistance to gas, water, grease or oil. Designed for freedom of movement, long life, and low maintenance costs. GENTEX CORP., 450 7th Ave., New York 1, N.Y.

(Item 168)

Respirator For Nuisance Dusts

A new 2-D Nuisance Dust Respirator, designed for dusts encountered in home shops, combining, liming, haying, corn-picking, chopping, cement dust., etc., has extra large filter area and two newly developed valves for clean, unstrained breathing.

A sanitary, disposable cotton liner fits the edges and enables exchanging the respirator from one worker to another.

Facepiece fits variety of faces and comfortable nose wire allows good fit. Street glasses and goggles worn easily with respirator.

Comes complete with extra supply of filters. WILLSON PRODUCTS DIV., Madison 10, Wis.

(Item 169)

Emergency Light Unit Recharges Automatically

CARPENTER MFG. CO., 15 Bradley St., Somerville 45, Mass. announces a line of emergency stand-by lights featuring fully automatic dual charging.

The new dual charger maintains the rechargeable battery at full power during periods on non-use and restores the battery to full charge within twelve hours after complete discharge.

Watchmaster lights automatically provide illumination, by means of self-contained battery power, the instant normal lighting current fails. When current is restored, the lamps shut off automatically and the charger is actuated.

Models permit mounting of up to 4 lamp heads on the control unit or remote powering of up to 15 lamp heads from one battery power source. Range of emergency illumination or time varies up to 30 hours depending upon the number of lamps.

(Item 170)

Nonflammable Marine Cleaning Solvent

Vythene Marine is a safety solvent specifically formulated for removing grease and oil from generators, distributors, ignition wires and other marine engine parts.

Contains no carbon tetrachloride, is nonflammable, and low in toxicity. The squirt spout permits effective application to many points.

Other uses for the product include: removal of wax and polish before refinishing brightwork or metal, cleaning all fabrics and upholstery (except vinyl). It can be sprayed on wet ignition systems for quick starts. TECT, INC., Marine Products Division, Northvale, N.J.

(Item 171)

Firm Introduces Wax-Plus-Polymer Finish Introduced by Johnson's Wax

A new product combines the advantages of both waxes and polymers, the service products division of JOHNSON'S WAX, Racine, Wis.

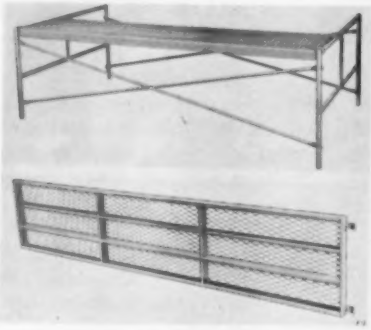
The product is said to combine high gloss and underfoot safety, resistance to scuffing, and buffability; high solids

content and a light-colored film; and water resistance and easy removability.

'Waxtra' can be used to patch worn areas without refinishing a whole floor; it scuffs less than wax finishes and is said to respond to buffing better than buffable polymer products. Available in 5-, 12-, 30- and 55-gal. containers.

(Item 172)

Introduces Steel Work Platform



The new SAFLOAD steel work platform has ridged formed channel, welded box frame construction, with expanded metal decking. The platform will support a concentrated load up to 1450 lbs. and a uniform load to 480 lbs. per lineal foot. Hanger end brackets are staggered, permitting a continuous runway length. The platform is available in 6, 7, 8, and 10 ft. standard lengths, 24-in. wide, painted or glavanized finish.

Designed specifically for heavy duty off-the-ground work and catwalks supporting equipment and personnel. Designed in accordance with AISI specifications for light gauge cold formed steel structural members. SAFWAY STEEL PRODUCTS, INC., 6228 W. State St., Milwaukee 13, Wis.

(Item 173)

Air Cleaning Nozzle With Safety Features

The Saf-T-Blow air nozzle was designed to reduce a hazard common where high pressure air supplies are used for both high-pressure tools and low pressure cleaning and dusting. For the latter operations, 100 psi lines are usually equipped with regulators to restrict the pressure and volume of air available. Tampering with the regulator can increase the safe pressure at the nozzle.

The Saf-T-Blow nozzle reduces nozzle pressure and air velocity while increasing the usable volume of air available, and has no regulating control that can be tampered with.

Can be connected to any standard air supply, allowing direct interchangability with air hammers, riveting guns, etc, which require 100 to 150 psi.

Nozzle can be placed directly against work surface or body without build-up of pressure. Nozzle pressure is 2 psi.

Available from JET ELECTRONICS, Albuquerque, N. M.

(Item 174)

New Silicones Waterproof Masonry

The introduction of new silicone resins into Monroe Monoseal has produced a more effective method of stopping moisture seepage through masonry walls. A complete moisture barrier is provided without altering the appearance. A single application of this clear liquid closes pores in brick, concrete block, stone and other masonry surfaces, preventing dirt and soot accumulation and eliminating efflorescence.

The liquid penetrates deep into above-grade walls, blocking water from entering and eliminating interior damage. The liquid is compounded from a combination of silicone resins, penetrating and aromatic solvents.

Weather or hot sun will not affect or damage the water repellency of the product. It is applied by wide brush or spray. Available in 55-, 30-, and 5 gallon containers from the MONROE CO., INC., Cleveland, Ohio.

(Item 175)

Groove-Joint Pliers Are Spark Resistant

The line of spark-resistant groove-joint pliers produced by AMPCO METAL, INC., Box 2004, Milwaukee 1, Wis., has been erpanded to four sizes with the addition of 16-in. long, 4-in. capacity and 6-½-in. long, 1-in. capacity models.

The pliers are forged from alloys approved for non-sparking use in Department of Commerce report PB-151650.

The groove-joint pliers are corrosive resistant and non-magnetic.

The tools are approved by Factory Mutual laboratories for use in locations where explosive or flammable conditions are encountered.

(Item 176)

Restyled Cigarette Dunker

STANDARD INDUSTRIAL PRODUCTS Co., 3527 W. Farmington Rd., Peoria, Ill., manufacturers of the SIPCO dunking station line of smokers, has announced the new Model TR-"TRIMSTYL" unit. The new unit has the same width (6¼ in.), and front to back dimensions (4 in.), as the Model "M" Midget canister, but is 7 in. high, (same as the jumbo models). Thus the capacity of the MODEL TR is more than doubled, but the unit still fits well into many locations where the canister must not extend out more than 4 in. from the mounting surface. Constructed of heavy duty cast aluminum, and supplied with a "lift off" mounting bracket. The unit is available in either deLuxe (bright polished) finish, or duo-tone finish (gray crinkle canister with satin finished lid).

(Item 177)

Radiation Counters Described in Bulletin

Two high-speed scalers for radiation counting in the clinical, industrial and nuclear research fields are described in Bulletin DS, offered by NUCLEAR MEASUREMENTS CORP., Indianapolis 18, Ind.

Both are decade type units that operate with all basic nuclear detectors – proportional, Geiger-Mueller, scintillation, and neutron. A feature is their ability to automatically signal any counting error due to tube or component failure.

Each scaler will register up to one million counts per minute, with preset time for periods up to 55 minutes. In addition, one model offers preset count in steps of 100, 1K, 10K and 100K counts per minute.

(Item 178)

Disposable Splints Store Flat

Here is a disposable splint which can be applied by one individual in a matter of seconds. The Hartmann Splint insures immobilization without the usual bulk and difficulty of other temporary splinting techniques.

The splint is tapered and scored to conform to the contour of the fractured limb. Attached muslin ties make it unnecessary to move the fractured area. Constructed of heavy duty white board, these splints can be stored flat with a minimum of space. Available in three sizes: Large, for adult leg and in combination to immobilize an entire side; medium, for adult full arm or child leg, hip, pelvis; small, for adult forearm, or child full arm. AUSTENAL CO., INC., 224 E. 39th St., New York, N.Y.

(Item 179)

Wooden-Soled Shoe Has Orthopedic Qualities

A combination orthopedic and safety shoe is being marketed by the REECE WOODEN SOLE SHOE CO., Columbus, Neb. A non-slip wooden sole acts as a splint, keeping the foot immobile and often eliminating the need for a heavy plaster cast. The shoe serves a variety of rehabilitative uses, hastening the healing of broken and crushed toes, feet, burns and bursitis. It has a soft airfoam inner sole for maximum comfort. Firm, lightweight canvas uppers in either olive drab or white are adjustable to any size bandage and allows air to pass through freely.

An optional feature is a corrugated metal guard over the front portion of the shoe to prevent any further injury.

The shoe is easily stocked and can be worn on either foot. Men's sizes range from a 7 to a 12, while the women's are from 4 to 9.

(Item 180)

New Line of Fiberglass Ladders

The Louisville Ladder Co., has developed fiberglass safety step, straight and extension ladders that can be used in electrical areas.

To achieve balance and strength, the ladders are made of heavy-duty fiberglass rails and quality aluminum steps.

For greater stability and safety in straight and extension ladders, I-Beam heavy-duty fiberglass rails are combined with an exclusive safety "OVAL-LOK" rung-to-rail connection which prevents aluminum rungs from turning, pulling out or collapsing.

The use of fiberglass rails gives excellent insulation qualities as well as added strength and maximum resistance to corrosion from moisture, chemicals, acids, exhaust and gas fumes.

All are equipped with safety rubber feet to increase insulation, prevent skidding and floor damage.

LOUISVILLE LADDER CO., 1101 W. Oak St., Louisville, Ky.

(Item 181)

Safety Device For Electrical Switches

This switch locking cover attachment, a safety device designed to assure control of electrical switches, fits any metal wall plate. Equipped with a Yale tumbler lock and a set of keys, the device discourages unauthorized persons from tampering with the switch. It is available in master keying and straight keying systems, and can be installed over existing flush toggle switch. HARVEY HUBBELL INC., State St. and Bostwich Ave., Bridgeport 2, Conn.

(Item 182)

Fabric Protects Against "Hot" Missile Fuels

A new clothing material developed to protect personnel manufacturing and handling missile fuels may also be useful wherever flash fires and exposure to extremely corrosive chemicals are hazards.

Developed by Du Pont and tested by the military, the material is known as "Armalon" fluorocarbon laminated fabric 97-001A. It consists of aluminized "Teflon" FEP-fluorocarbon film laminated to a fabric made of "Teflon" TFE-fluorocarbon fiber. Government agency tests report "Armalon" is more resistant to all chemicals tested, including gaseous fluorine, chlorine, trifluoride, and pentaborane, than any suitable fabric yet evaluated.

Where protection against flash fires is not required, the film-to-cloth laminate is available without the reflective aluminized coating. E. I. du Pont de Nemours and Co., Wilmington 98, Del.

(Item 183)

Cable Socket Type Overload Switch

When attempts are made to lift loads beyond preset limits, the Dyna Switch unit will immediately stop the motor. Red lights or buzzers can also be used as alternatives when warnings only are required.

The new cable socket feature permits installation in tight quarters when valuable head room is at a premium. Instead of eyes and hooks, the lifting cable and socket are electric welded directly into the unit's deflection beam. (Available with cable socket attachment on *both* sides if desired).

These switches have a safety factor rating in excess of the strength of the cable to be used. Installation is with ordinary tools. W. C. DILLON & CO., INC., 14620 Keswick St., Van Nuys, Calif.

(Item 184)

Lens for Flashers and Warning Lights

A plastic lens for barricade use that permits the saving of battery power is now being produced by the Stimsonite Div., ELASTIC STOP NUT CORP. OF AMERICA, 3445 N. Kimball Ave., Chicago 18. Longer battery life with less servicing is a result. This lens, branded "Hazard, uses a new optic

system which gathers "lost" light – packs it – then projects it for maximum illumination on flashing barricades and other warning devices.

Because of the optic design, the lens appears fully illuminated and the candlepower is greatly increased, providing improved warning within the designed viewing angles.

One of the real problems encountered in the use of flashing devices on barricades is that approaching drivers view the signal at varied angles. Even at relatively wide angles the Stimsonite Hazard lens produces a signal which stands out at good distances.

For added signal intensity, improved detection and maintenance of signal in the event of bulb or battery failure, an area of reflex reflector in the form of a ring is incorporated around the outside of the lens on one of the models. The Hazard lens fits all standard 7" barricade units.

(Item 185)

Markets New CO_2 Extinguisher

A hand-portable fire extinguisher is a new product of the Cardox Div., CHEMETRON CORP.

Ratings given by Underwriters' Laboratories, Inc. based on test fires in open containers using gasoline as the fuel, are 4BC, 8BC, 10BC, 12BC, and 12BC (CQ) for the five Cardox models with capacities of 5, 10, 12, 15 and 20 lbs. of carbon dioxide and with total weights of 16, 34, 36, 42 and 57 lbs., respectively.

The portable extinguishers have patented designs that achieve correct rate of discharge and the right size of "snow" particles, and eliminate turbulence, the company claims.

(Item 186)

Spray Designed to Prevent Rug Slip

Sta-Put is a product designed to prevent rugs from slipping on floors in offices or homes. It has had other applications in industry, particularly for inclined conveyor belts which have been worn smooth.

Sta-Put is sprayed onto rug backs in a matter of seconds and drys in a few minutes. It's rubberized surface holds up for months. It is equally easy to apply to belts. Manufactured by CLING SURFACE CO. of 1048 Niagara St., Buffalo, N.Y.

(Item 187)

PRODUCT LITERATURE

Available free from manufacturers, literature describing their safety products, and offering useful information on the care and use of safety products. To obtain, circle appropriate numbers on Reader Card.

Report on Barrier Creams

This semi-technical sales report originally issued to the MSA Sales Engineers may be of assistance to those concerned with contact dermatitis in industry. Much of the information given is general, and specifics were consciously avoided. Ask for Sales Report No. 1060.

If after receiving this report you wish additional data or technical detail, write to MINE SAFETY APPLIANCES CO., 201 North Braddock Ave., Pittsburgh 8, Pa.

For more details circle No. 201 on enclosed return postal card.

High Pressure Fog

Original high pressure fog and its effectiveness in fighting fires is featured in a 16-page catalog available from John Bean, Lansing, Mich. Specifications and performance features are listed for all John Bean in-plant fire fighters including stationary, mobile and skid-mounted equipment. Industrial Sales Department, John Bean Division, Food Machinery & Chemical Corp., Lansing 4, Mich.

For more details circle No. 202 on enclosed return postal card.

Automatic Fire Detection System

Described in this literature are automatic fire detection and warning systems for industry, commerce, institutions, governmental facilities, and large residential buildings. These systems permit either audible or visible, coded or non-coded alarms at one or many stations, according to the needs of each installation. Notifier Corp., 3700 North 56th St., Lincoln 4, Nebr.

For more details circle No. 203 on enclosed return postal card.

Fire Vents

A technical report released by the Penn Ventilator Co., Inc., Philadelphia 40, Pa. describes how fire vents reduce fire destruction to commercial & industrial property. Amoung items covered are the proper sizing and positioning of fire vents, proper spacing, effects of sprinklers, use of draft curtains, effect of ceiling height on room temperature, use of exhaust fans, and the selection of properly engineered fire vents.

For more details circle No. 204 on enclosed return postal card.

Oxygen Therapy Unit

Literature is available from Lefeguard Corp., 7309 State Road, Philadelphia 35, Pa. describing their emergency oxygen therapy unit. The immediate administration of oxygen can often mean the difference of life or death. In cases of heart attack, electric shock, persons overcome by different types of gases, asthma, convulsions, drowning, stroke, migraine headaches, or anywhere speedy administration of oxygen is vital.

For more details circle No. 205 on enclosed return postal card.

All-Purpose Cleaner

Designed for commercial, industrial and other heavy-duty applications, this all-purpose cleaner vacuums (wet or dry), blows, air sweeps, sprays—making it four units in one. Featured are large rear wheels for maximum mobility, holder for carrying attachments, and handle for easy maneuvering, even on steps. Ace-Sycamore, Inc., Sycamore, Illinois.

For more details circle No. 206 on enclosed return postal card.

Emergency Lighting

A 12-page booklet offered by Electric Cord Company shows what happens in a power failure "blackout". "The Odds On Emergency Lighting" covers the probability and costs involved in power failure, as well as information and specifications on Light Warden battery-operated emergency lighting. Typical installation diagrams and costs are included. Electric Cord Co., 432 Plane St., Newark 2, N.J.

For more details circle No. 207 on enclosed return postal card.

Fire Protection for Truck Loading Racks

A booklet describing fire protection methods currently used on tank truck loading racks has been published by National Foam System, Inc., West Chester, Pa. Contents include control of fire by water spray through fixed pipe systems and portable nozzles; application of foam through pipe systems and portable nozzles; and methods of proportioning foam liquid.

For more details circle No. 208 on enclosed return postal card.

Chemical Processing Compounds

This illustrated, 12-page booklet contains specific information for the use of each of the 43 products that make up Turco Products, Inc.'s standard line of cleaning and processing compounds for the metalworking industry. Among the chemical processes discussed are: cleaning, phosphating, conversion coatings, protective coating, paint and carbon removing, descaling, rust removing and prevention, inspection, processing aluminum and maintaining paint department and other plant areas. Turco Products, Inc., 24600 South Main Street, Wilmington, California.

For more details circle No. 209 on enclosed return postal card.

Safety Belts

Specially designed for worker comfort and protection from falls, a variety of safety belts, harnesses, straps, and lanyards are described and illustrated in a booklet available from Mine Safety Appliances Co., 201 North Braddock Ave., Pittsburgh 8, Pa. Detailed are quality control, types of leather and webbing, tensile strengths up to 9,400 pounds, hand set solid copper rivets and burrs, forged steel hardware, and design adaptations.

For more details circle No. 210 on enclosed return postal card.

Dockboards

The Kelley Co., Inc. 2129 W. Mill Road, Milwaukee 9, Wisconsin announces availability of bulletins describing their adjustable dockboards. Featured is a hinged lip section which retracts behind bumpers automatically. When the truck pulls out, no attendant is necessary to readjust dockboards. Trucks with end loads, gates, closed doors, can be spotted with confidence anytime because no part of dockboard extends beyond bumpers except when servicing the carrier.

For more details circle No. 211 on enclosed return postal card.

"Noishield" Panels

Bulletin C70 describing their Noishield panels is available from INDUSTRIAL ACOUSTICS CO., INC., manufacturer of noise control equipment. The fire-resistive acoustic panels are designed for use as sound barriers and partial enclosures for control of noise in industrial plants and offices. They may also be used to construct supervisory offices, control rooms, complete machinery enclosures and sound isolation rooms.

Panels are constructed with special connecting joints and are available in cold rolled steel, galvanized steel, stainless steel and other materials. The non-combustible filler material used in each panel meets strict fire retardant criteria as determined by recent tests conducted by Underwriters Laboratories, Inc. Industrial Dept., 341 Jackson Ave., N.Y. 54, N.Y.

For more details circle No. 212 on enclosed return postal card.

Safety Equipment for Fire Departments & Rescue Squads

The Atlas Safety Equipment Co., Inc., 175 North 10th Street, Brooklyn 11, N.Y., has literature available describing their line of emergency equipment for fire departments and rescue squads. Listed are pompier belts, hand brake belts, hose roll carriers, spanner belts, chain extension life belts, axes and hatchets, and life nets. Plus their complete line of industrial belts and harnesses.

For more details circle No. 214 on enclosed return postal card.

Industrial Weed & Brush Control

Produced by the Industrial and Biochemicals Department of the Du Pont Company, this guide can be useful in analyzing vegetation problems and selecting the right chemical or combination of chemicals to obtain the most effective and economical vegetation control in industrial areas. E. I. du Pont de Nemours & Company, Industrial and Biochemicals Department, Room D-4147, Wilmington 98, Delaware.

For more details circle No. 215 on enclosed return postal card.

Fire Hose Reels and Hose Carts

Western Fire Protection, Inc., 611 East Third Street, Los Angeles 13, California has literature describing both their hose reels and hose carts. The reels feature instantaneous fire fighting. Immediate full water pressure at the nozzle. Any required amount of hose can be used from 5′ to 150′ without kinking and without shutting off water. The hose carts are designed and built with an eye to long and hard usage. A light weight rugged cart which compactly stores and easily transports fire hose.

For more details circle No. 216 on enclosed return postal card.

Snake Bite Kit

Described and illustrated in this bulletin is the M-S-A snake bite kit which contains everything needed for emergency treatment: tourniquet, incising knife, self-suction pump with adapters, antiseptic swabs, compresses, inhalants. All contained in a compact kit no bigger than a pocket-sized cigarette pack. Mine Safety Appliance Co., 201 North Braddock Ave., Pittsburgh 8, Pa.

For more details circle No. 213 on enclosed return postal card.

Safety Mirrors

Safety mirrors for use in industrial plants, warehouses, shipping platforms, dock areas, over assembly lines, at blind corners and aisle intersections, anywhere that they can prevent collisions and accidents by giving a clear view. Bell Glass and Mirror Co., 1328 Flatbush Ave., Brooklyn 10, N.Y.

For more details circle No. 214 on enclosed return postal card.

Spark-Resistant Tools

Over a hundred different types of tools made of spark resistant beryllium copper, from miniature wrenches and pliers to pick-axes, are described in this catalog from Beryllium Corp., Reading, Pa. In addition to being non-magnetic, the tools are non-corrosive.

For more details circle No. 215 on enclosed return postal card.

Material Handling Devices

Over 25 material handling devices are described in catalog C-3 released by Merrill Brothers, 56-28 Arnold Ave., Maspeth, N.Y. Lifting clamps designed to give safety in handling and economy in operation.

For more details circle No. 216 on enclosed return postal card.

Facts On Athlete's Foot

This folder, which includes medical opinions, is available from Onox, Inc., 121 Second St., San Francisco 5, Calif., manufacturer of a skin treatment designed to keep the feet tough and healthy to increase the skin's resistance to fungus growth.

For more details circle No. 217 on enclosed return postal card.

Carbon Dioxide Extinguishing System

This literature describes how a Kidde carbon dioxide extinguishing system will smother flammable-liquid and electrical fires in seconds, leave no mess, turn off power and sound alarms. Walter Kidde & Co., Inc. 145 Main St., Belleville 9, N.J.

For more details circle No. 218 on enclosed return postal card.

Make Icy Surfaces Safe

Use of Wyandotte Zorb-All on ice is said to assure positive traction on icy walks, steps, ramps, parking areas, and driveways. Inert and neutral, it cannot ruin the edges of lawns or pit and eat away concrete. Brochures available from Wyandotte Chemicals Corp., J. B. Ford Div., 130 Clark St., Wyandotte, Mich.

For more details circle No. 219 on enclosed return postal card.

NEWS ITEMS

New personnel, new plants and facilities, other newsworthy events in the safety product manufacturing and merchandising fields.

FYREPEL PRODUCTS INC., Newark, Ohio, has moved to their new plant #3. The main offices, pictured, are now located here.

Fyrepel is designer and fabricator of alumninzed glass cloth heat protective clothing, fire fighting clothing and equipment.

MSS Reorganizes Research Activities

MINE SAFETY APPLIANCES Co., Pittsburgh, Pa., announced it is consolidating the divisionalized research activities of the parent corporation and a research subsidiary.

J. T. Ryan Jr., president, said all basic and applied research product development, and engineering will be centralized in a newly-established corporate research and engineering division. Personnel and facilities of MSA RESEARCH CORP., a subsidiary engaged in highly diversified research projects, also will be integrated into the new division.

Roger F. Mather

ROGER F. MATHER, formerly associated with the product development division of U. S. Steel Corporation, is director of the division. DR. W. P. YANT, who has been in charge of the parent company's research activities for the past 25 years, will become research consultant to the president.

Yant is nationally known for his work in industrial hygiene, having served as first president of the American Industrial Hygiene Association in 1939.

Three associate directors and a manager of administrative services have been appointed to complete the executive direction of the new division: J. W. MAUSTELLER, associate director-research; R. C. WERNER, associate director-engineering and development; J. P. STRANGE, associate director-product engineering; and D. N. WISE, manager of administrative services.

Born in London, England, Mather is a graduate of Cambridge University. He received a master's degree at Massachusetts Institute of Technology in 1940, and was awarded a master's degree by Cambridge in 1941. He is a member of the American Ordnance Association, American Society of Mechanical Engineers, Society of Automotive Engineers, and the Institute of Aeronautical Sciences.

R. C. Werner

J. W. Mausteller

Both Werner and Mausteller have been associate directors of MSA Research Corp. Werner is a graduate of the University of Michigan where he received his doctorate in chemical engineering. Mausteller received his doctorate in physical chemistry at Pennsylvania State University.

J. P. Strange

D. N. Wise

Strange has been associated with MSA since 1950. He has been manager of applied research and engineering for the technical products division since 1957. He has a B.S. degree in physics from Waynesburg College.

Wise joined MSA in 1937 in the industrial engineering department. He was appointed manager of applied research and engineering for the safety products division in 1957.

New Sales Manager For Walter Kidde & Co.

L. C. BAILEY has been appointed sales manager, industrial and marine division, Walter Kidde & Co., Inc. Belleville, N.J.

In his new post Bailey will be responsible for sales of portable fire extinguishers and engineered extinguishing systems.

Bailey joined the firm in 1957 and has been Boston regional manager.

He attended the University of Vermont and graduated from Babson Institute.

Willson Names Kansas City Distributor

RICHARDSON SUPPLY Co., 814 West 17th. St., Kansas City, Mo. has been appointed the franchise distributor for WILLSON PRODUCTS in the Kansas City area.

The newly established firm will handle safety clothing, fire equipment, safety glasses, goggles, hard hats, earmuff type hearing protection, welding goggles and helmets, respirators and gas masks.

Scovill Expands Service

The opening of a new and fully equipped attaching machine service center in Kansas City, has been announced by the Closure Div., SCOVILL MFG. Co. The new facilities are designed to provide better and faster service to the company's growing number of customers in the central midwest.

The firm manufacturers closures for the apparel and related industries, marketed under the brand names of Gripper Zippers and Gripper Snap Fasteners. Scovill has their headquarters in Waterbury, Conn.

Burn Spray Distributor Chosen

The SAFETY SUPPLY COMPANY OF TORONTO, Ontario have been named exclusive Canadian distributing agents for the General Scientific Equipment Company of Philadelphia, Pa. for "G-63" – an aerosol spray for burns.

advertisers' index

advertising staff

425 N. Michigan Ave.
Chicago 11, Ill., WHitehall 4-4800

advertising manager:
Fred Lubet

advertising production manager:
John Tribble

advertising sales representatives

Chicago: Macintyre-Simpson & Woods
75 E. Wacker Drive, CEntral 6-1715

New York: Macintyre-Simpson & Woods
101 Park Ave., LExington 2-0020

San Francisco: Duncan A. Scott & Co.
85 Post St., GArfield 1-7950

Los Angeles: Duncan A. Scott & Co.
1901 W. 8th St., HUbbard 3-6211

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ON SAFETY PRODUCTS & SERVICES SHOWN IN THIS ISSUE

National **SAFETY NEWS**

Reader Service

Send now for free literature about the safety products and services in this issue.

You'll find Key Numbers throughout this issue. To get more information, just circle the Numbers of the products you're interested in on one of the Reader Cards below. Fill out the mailing information — detach the Card — and put it in the mail. Product literature will be sent to you free and without obligation by the manufacturer.

Here's a check list of types of information available quickly . . . free of charge

- **PRODUCTS ADVERTISED**

The Advertisers' Index on the opposite page briefly describes products advertised and lists Key Numbers.

- **NEW SAFETY EQUIPMENT**

Check this special section for newly introduced or improved safety products and services that you want to know more about.

- **PRODUCT LITERATURE**

Following the New Safety Equipment Section you'll find a listing of catalogs, special reports, other printed material that is valuable as reference data.

IMPORTANT

Be sure to print your name, title, company and address legibly on Reader Card before mailing.

MS-301

Please send me information on items circled below **SEPTEMBER 1961**

use before November 30

1	16	31	46	61	76	91	106	121	136	151	166	181	196	211	226	241	256	271	286	301	316
2	17	32	47	62	77	92	107	122	137	152	167	182	197	212	227	242	257	272	287	302	317
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5	20	35	50	65	80	95	110	125	140	155	170	185	200	215	230	245	260	275	290	305	320
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15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330

NAME_____ POSITION_____

COMPANY_____

ADDRESS_____ CITY & STATE_____

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14	29	44	59	74	89	104	119	134	149	164	179	194	209	224	239	254	269	284	299	314	329
15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330

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. . . your guide to products for your plant safety program

Within the pages of National Safety News you'll find more safety products advertised than in any other safety magazine.

To get more information about any product advertised use one of the Reader Cards below. Just circle the Key Numbers of the products you'd like more information about and drop the Card into the mail —no postage necessary (if mailed in U.S.A.). Product literature sent free without obligation.

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NATIONAL SAFETY NEWS
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NATIONAL SAFETY NEWS
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CHICAGO 11, ILLINOIS

NO POSTAGE REQUIRED
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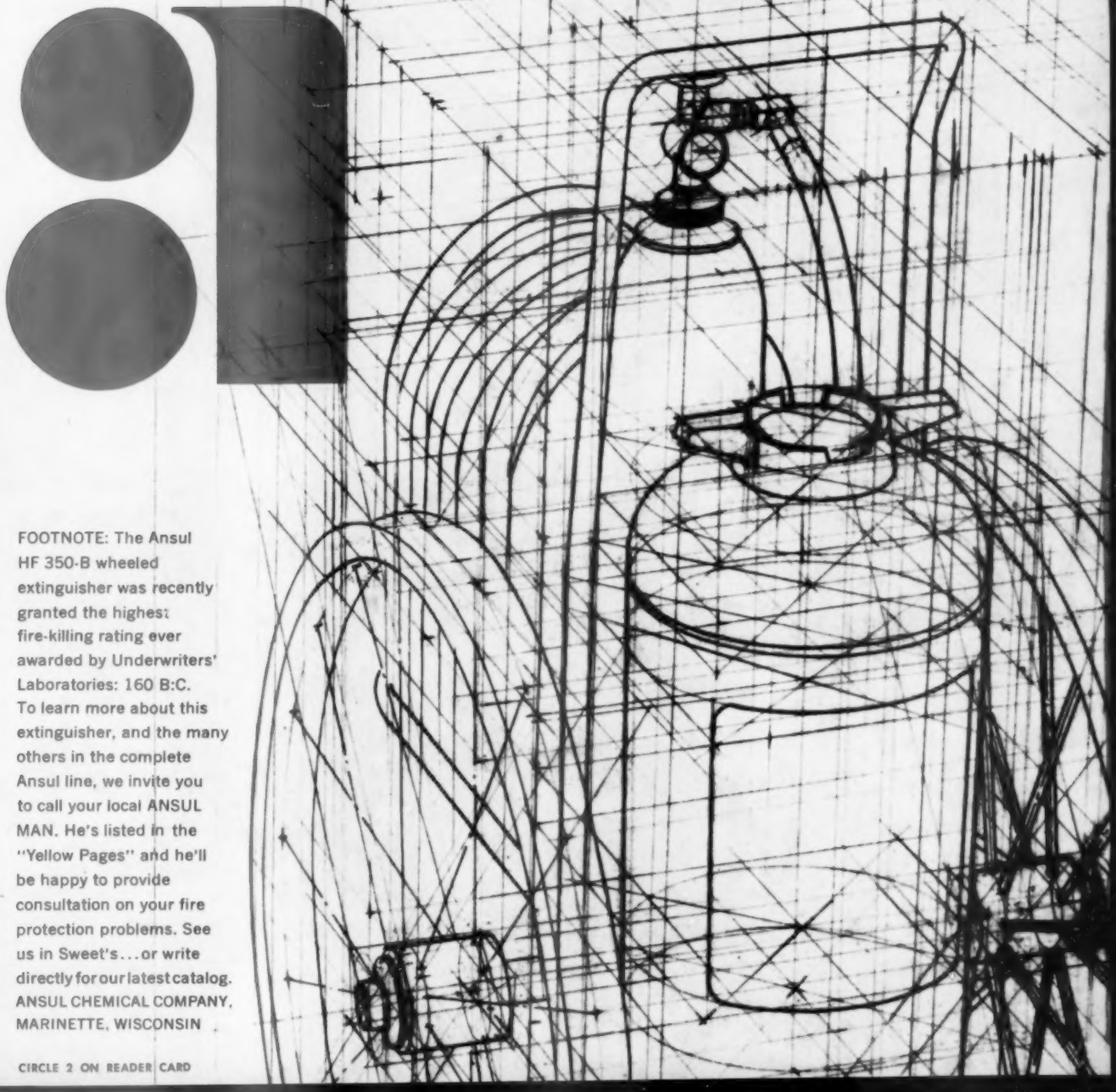
MS-301 Printed in U.S.A.

For some 20 years Ansul has been making fire extinguishers...with careful, painstaking attention to the details of quality, design and performance. Our extinguishers cost slightly more! They also put out more fire, last longer and are far less expensive to maintain. Ansul fire extinguishers provide basic protection for more than half of America's 500 largest industrial firms...are first choice of those fire protection experts who look at price but understand value. ANSUL



FOOTNOTE: The Ansul HF 350-B wheeled extinguisher was recently granted the highest fire-killing rating ever awarded by Underwriters' Laboratories: 160 B:C. To learn more about this extinguisher, and the many others in the complete Ansul line, we invite you to call your local ANSUL MAN. He's listed in the "Yellow Pages" and he'll be happy to provide consultation on your fire protection problems. See us in Sweet's...or write directly for our latest catalog. ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN

CIRCLE 2 ON READER CARD

NEWS FROM AO

R-90 "Red Devil" filter can be inserted in seconds into R-2000 Respirator.

AO "Red Devil" variable density filter gives

Lower Breathing Resistance, Longer Life

Here's everything you want in a respirator filter—high efficiency, low breathing resistance and longer service life. You get it in the compact, lightweight R-90 "Red Devil" filter because of its variable density construction.

A red prefilter is thermally bonded to the gray final filter. Ultrafine asbestos fibers are dispersed through this final filter with a concentration gradient. Larger particles lodge on the prefilter during inhalation, while others enter the final filter until they cannot pass between the asbestos fibers. There is less breathing resistance than if dust piled up on the surface because the top three quarters of the filter works to trap and hold particles without plugging quickly.

AO "Red Devil" filters are approved by the U.S. Bureau of Mines for dusts not significantly more toxic than lead, pneumoconiosis-producing mists and chromic acid mist. They are one of nine interchangeable filters that make the AO R-2000 Series Respirator ideally suited to plants with several respiratory hazards. For details, consult your AO Safety Products Representative.

You get 9 respirators in 1 with the AO R-2000 and its interchangeable filters

Cartridge or filter	Hazard
R-90	All dusts and mists
R-15	Nuisance and pneumoconiosis-producing dusts
R-16	Toxic dusts not significantly more toxic than lead
R-17	All dusts not significantly more toxic than lead
R-31	Organic vapors
R-32	Acid gases
R-33	Organic vapors and acid gases
R-34	Ammonia
R-35	Dusts and organic vapors simultaneously

Your Surest Protection . . . AO SURE-GUARD Products

American Optical COMPANY

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